2018

LEGISLATIVE REPORT

Broadband Mapping Legislative Budget Intent Language

REGULATORY COMMISSION OF ALASKA

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Introduction

The Legislature included the following intent language in its 2018 Budget for the Regulatory Commission of Alaska (Commission):

> *It is the intent of the legislature that the Regulatory Commission of Alaska produce a map of broadband coverage in the state, using the best available GIS data and technology. The Regulatory Commission of Alaska shall deliver a report summarizing mapping efforts and results to the Speaker of the House, the President of the Senate, the Co-Chairs of the House Finance Committee, the Co-Chairs of the Senate Finance Committee, and the Legislative Finance Division, by January 1, 2019.*

This report summarizes the mapping requirements of various Alaska eligible telecommunications carriers that receive high cost funds to deploy broadband capable networks, the public mapping data available, and the limitations on that data and possible solutions advanced by broadband providers. It includes copies of maps produced by Alaska telecommunications carriers and filed with the Commission, as well as maps generated by Commission staff (Staff) utilizing public data sources.

Why Map Broadband Service Availability?

With the 2011 Transformation Order, the Federal Communications Commission (FCC) embarked on a process to convert its universal service focus from traditional voice services to creating next generation networks that are capable of providing broadband Internet service. As part of that transformation, the FCC has instituted a push to map broadband availability and speeds to track the competition among Internet Service Providers (ISPs), identify unserved and underserved markets for Broadband Internet service, and to ensure that scarce high cost Universal Service support is used wisely and efficiently to expand service in certain underserved markets and avoid overbuilding others.

What Public Mapping Resources Are Available?

Form 477 ISP mapping

Generally, all facilities-based ISPs are required to file Form 477 data with the FCC biannually, identifying areas where they offer Internet access that exceeds 200 kbps.[1] This includes traditional wireline carriers, satellite, fixed wireless, and mobile wireless ISPs. Currently the Form 477 data is collated by census block, and is publically available at a significant time-delay. The most current data set marking broadband deployment as of June 30, 2017.[2] The FCC has recently compiled a report based on this data set that analyzes the status of Internet access service nationwide and state-by-state for both wireline and wireless broadband service.[3]

Fixed Broadband Deployment Mapping

The FCC presents the fixed Form 477 data provided by wireline, satellite, and fixed wireless providers in its Fixed Broadband Deployment map. Staff has provided several screen shots to demonstrate the census block-based mapping resource.[4] A potential customer in a given location is, in theory, able to type in their address and obtain a list of all potential ISPs that offer service at least somewhere in the census block in which they reside. For instance, in June of 2017 the Commission's offices could have received broadband Internet service from one cable ISP at claimed download speeds of 1 Gbps, one Asymmetric Digital Subscriber Line (ADSL) ISP at download speeds of 25 Mbps, one fixed wireless ISP at download speeds of 25 Mbps, and two satellite ISPs with download speeds of between 25 and 2 Mbps.[5] Similarly, a census block that encompasses a portion of Willow, Alaska lists three providers, Matanuska Telephone Association (MTA) ADSL

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[1] *See generally* https://www.fcc.gov/general/broadband-deployment-data-fcc-form-477 (last visited 12/7/2018)

[2] *See* Public Notice DA 18-918, WC Docket 11-10, released on September 10, 2018, available at https://docs.fcc.gov/public/attachments/DA-18-918A1.pdf (last visited 12/7/2018). Data sets for fixed deployments are available at: https://www.fcc.gov/general/broadband-deployment-data-fcc-form-477, while mobile deployments are available at: https://www.fcc.gov/mobile-deployment-form-477-data.

[3] *Internet Access Services: Status as of June 30, 2017*, Wireline Competition Bureau, November 2018, (available at https://prodnet.www.neca.org/publicationsdocs/wwpdf/112018ias.pdf) (last visited 12/7/2018).

[4] See Exhibits A, B and C.

[5] See Exhibit A.

service at varying download speeds of either 40 or 20 Mbps, and a satellite ISP at claimed download speeds of 25 Mbps.[6] Finally, the census block that includes the Dillingham Airport similarly claims three ISPs: Nushagak Electric and Telephone Cooperative offering cable or ADSL wired claimed download speeds of 6 Mbps, and a satellite ISP claiming download speeds of 2 Mbps.[7]

The size of rural census blocks in Alaska presents an issue in interpreting the data provided by the Form 477 map since the block is depicted as serviced if a single address is considered serviceable by any provider. The Willow census block, for example, is massive compared to the census block containing the Commission's offices. And while it's entirely likely that a customer seeking service in a given census block in a population center like downtown Anchorage will be able to secure it at the claimed speeds suggested in the FCC fixed broadband map, there is less confidence that a customer seeking service in the depicted Willow-adjacent census block will be able to secure the speeds claimed in the mapping resource since that question is dependent on the availability of terrestrial facilities being in place necessary to provide service to a particular location within that census block.

A potential false impression of service availability depicted in Form 477 data may prove misleading to both customers seeking service and policy-makers seeking to promote greater Internet access. A quick review of the Fixed Broadband Deployment map suggests most if not all of Alaska has robust satellite broadband Internet service available. However, the map fails to note that obstacles, both logistical and topographical, can severely inhibit satellite broadband service. Further, the Form 477 data does not provide pricing or plan information that would be helpful to consumers pursuing realistic broadband service – for instance satellite ISP service can suffer from latency issues and often have strict usage limits and long minimum contracts.[8]

There is a danger that Form 477 data may be used to create a false impression of the relative health of broadband markets for policymakers that may be considering decisions on whether to regulate those markets more strictly. Staff notes a recent General

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[6] *See* Exhibit B.

[7] *See* Exhibit C.

[8] *See e.g.* https://broadbandnow.com/report/satellite-internet-good-enough-rural-broadband/ (last visited 12/7/2018).

Accounting Office (GAO) study that suggests that the FCC tends to overstate the availability of broadband service on tribal lands, stating in its highlights:

> The [FCC] collects data on broadband availability from providers, but these data do not accurately or completely capture broadband access on tribal lands. Specifically, FCC collects data on broadband availability; these data capture where providers may have broadband infrastructure. However, FCC considers broadband to be "available" for an entire census block if the provider *could* serve *at least one* location in the census block. This leads to overstatements of service for specific locations like tribal lands. FCC, tribal stakeholders, and providers have noted that this approach leads to overstatements of broadband availability. Because FCC uses these data to measure broadband access, it also overstates broadband access—the ability to obtain service—on tribal lands.[9]

The GAO study also faulted the FCC's failure to collect other data such as affordability, quality of service (latency, outages, speed variation), and service denials (where a provider could but won't provide service for any number of reasons).[10] The GAO went on to observe:

> [O]n three of the tribal lands we visited, we observed fiber optic cable located close to government and residential structures that did not have broadband access via fiber. According to tribal government officials, despite the physical proximity of the fiber optic cable, the tribal government and residents could not access it because the provider was not

[9] Government Accountability Office, *Broadband Internet: FCC's Data Overstate Access on Tribal Lands*, GAO-18-630, September 2018, at 2 (available at https://www.gao.gov/assets/700/694386.pdf?utm_campaign=Newsletters&utm_source=sendgrid&utm_medium=email&mc_cid=738f56229d&mc_eid=eb527a594e) (last visited 12/7/2018).
[10] Id. at 20-24.

> offering service or was unwilling or unable to build to the structures.[11]

In addition to the GAO's critique of Form 477 data, Microsoft Corporation (Microsoft) recently provided the FCC with results from its own nationwide study of real-world broadband network capability. Microsoft supplied actual broadband usage data in contrast to ISP-reported broadband availability to demonstrate "that only a small percentage of consumers actually access the Internet at broadband speeds" in the areas highlighted.[12] Microsoft recommended the FCC revamp the Form 477 reporting obligations to "report where fixed broadband connections are actually being provisioned, rather than where broadband could be provided", and noting that improved mapping of broadband service would "assist Microsoft in better targeting its resources and collaborating with its teleco partners to provide broadband service to rural communities."[13]

Given what appear to be valid critiques of the accuracy of Form 477 data, especially with respect to rural areas of the country, the Commission is wary of relying on Form 477 based mapping resources to inform the Legislature of the relative state of broadband access in Alaska if that information will be used to further inform actual policy on how or whether to expend state funds on broadband deployment in a reasonable and fair basis.

Mobile Voice and Broadband Coverage Shapefiles

The FCC provides the public with shapefiles of wireless/mobile voice and broadband service availability from reported Form 477 data.[14] It also organizes the data by census block. With the appropriate mapping software, the shapefiles can be rendered overlaying a mapping program such as Google maps to see potential coverage areas for mobile providers at varying speeds. To the best of Staff's knowledge, the FCC does not actively audit provider claims made in Form 477 data with onsite speed tests, but does provide consumers with a Speed Test App that can be downloaded on a mobile device that allows

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[11] Id. at 24.

[12] *See* Microsoft Corporation Ex Parte, WC Docket 11-10, dated December 5, 2018, at 1, available at: https://prodnet.www.neca.org/publicationsdocs/wwpdf/120718micro.pdf (last visited 12/7/2018).

[13] Id.

[14] *See* https://www.fcc.gov/mobile-deployment-form-477-data (last visited 12/7/2018).

consumers as part of a "collaborative, crowdsourcing initiative to gather anonymous data … to assess [mobile] broadband performance nationwide."[15]

Commission staff have rendered the relevant Form 477 shapefiles from the mobile providers offering service in Alaska in the attached maps.[16]

Possible Augmentation of Form 477

The FCC has not entirely ignored the lack of granularity in the Form 477 data and resultant maps of nationwide broadband service availability. In a 2017 notice, the FCC acknowledged the benefits of collecting address-level data for fixed broadband service, stating: "[H]aving national, granular broadband deployment data could greatly assist with any future disbursement of high-cost funds or universal service reverse auctions, assist consumers with locating broadband competition in their area, and with other broad public policy goals", but also noting the significant cost to providers from obtaining that granular data, which may require physically walking facilities and recording geocodes for locations that can be serviced.[17]

Responses from providers to the FCC Further Notice of Proposed Rulemaking on Form 477 data highlighted the cost and difficulty in geocoding broadband service availability. NCTA – the Internet & Television Association (NCTA) comments stated that the existing Form 477 reporting requirements were already burdensome, noting that "[i]mplementing this new requirement [in 2013] placed considerable new burdens on broadband providers, requiring many companies to devote significant resources to updating their internal records and sorting data in ways that do not serve a business purpose."[18] NCTA acknowledged that while, in its view, "there is no need for more granular data regarding census blocks located in urban areas because such blocks tend to be small and service

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[15] *See* https://www.fcc.gov/consumers/guides/fcc-speed-test-app-tip-sheet (last visited 12/7/2018).

[16] *See* Exhibit D.

[17] *See* Further Notice of Proposed Rulemaking, Modernizing the FCC Form 477 Data Program, WC Docket 11-10, FCC 17-103, released August 4, 2017, at para 39, available at: https://ecfsapi.fcc.gov/file/08041199205324/FCC-17-103A1.pdf (last visited 12/7/2018).

[18] Comments of NCTA – The Internet and Television Association, WC Docket 11-10, dated October 10, 2017, at 3, available at: https://ecfsapi.fcc.gov/file/1010580905912/101017%2011-10%20Comments.pdf (last visited 12/7/2018).

generally is available uniformly throughout such blocks," it went on to note that "there may be value in collecting more granular data regarding deployment in less densely populated areas".[19]

NCTA further decried the lack of an "economically feasible" "uniform method" for obtaining the more granular location specific data.[20] NCTA stated that for providers that don't already track street-level serviceability:

> To determine all of the street addresses serviceable by its existing facilities (whether already connected, reachable by drops, or reachable by line extensions that can be constructed within a typical service interval) within its service areas, a company would likely have to expend significant funds to identify (from third-party sources, such as county tax records and postal records) potential addresses within those service areas requiring investigation, pay vendors to standardize the address formats, analyze the addresses individually against the locations of its plant, conduct field inspections in a large percentage of the census blocks where they currently have facilities, and then manually create records for each address.[21]

Other commenters noted that lack of a nationwide address databank risks complications from any move to require address-specific service. Notably, the United States Telecom Association (USTelecom) remarked that "[a]s reported by the US Census … approximately 12% of all the locations nationwide have verified geocoded addresses. Simply put … [a]ny change to the existing 477 reporting requirements does not enhance the data but skews it."[22] The USTelecom did acknowledge that "road segment" and other "sub-census block" information and "best-efforts addresses", "could be useful for census blocks that have

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[19] Id. at 4.

[20] Id.

[21] Id at 6-7.

[22] Comments of USTelecom, WC Docket 11-10, dated October 10, 2017, at 8, available at: https://ecfsapi.fcc.gov/file/10102271000033/FCC%20Form%20477%20Comments%20FINAL_10_10_17.pdf (last visited 12/7/2018).

an area greater than 2 square miles", but the association argued that any sub-census information should be voluntary not mandatory.[23]

High Cost Universal Broadband Portal Mapping

To the extent Universal Service funding is in question, the FCC has taken more aggressive steps to require location-specific serviceability data from carriers/providers that receive federal high cost support, at least for present and future deployments. In Alaska, three different high cost programs are at issue. Most eligible telecommunications carriers receive high cost support through the Alaska Plan. Alaska Communications (AC), as a price cap carrier, receives its support through the general Connect America Fund, while two rate-of-return carriers (Alaska Telephone Company and Summit Telephone) participate in the Alternative-Connect America Cost Model (A-CAM) program. Each high cost program has different data requirements and reporting deadlines, as summarized below. Carriers are instructed to upload mapping data onto the High Cost Universal Broadband (HUBB) Portal in accordance with their respective program requirements.[24] The geocoded data is rendered in a publically available, highly detailed Connect America Fund Broadband Map.[25] However, to the extent geocoded data for all broadband capability is not required, the Connect America Fund Broadband Map provides an incomplete picture of the underserved and unserved areas in Alaska. Commission staff have compiled several maps filed by the Alaska carriers receiving funding under the Alaska Plan, Connect America Fund, and the A-CAM.[26]

Alaska Plan Mapping/Data Requirements

As noted, all but three Alaska Eligible Telecommunications Carriers (ETCs) that receive federal high cost funds participate in the Alaska Plan. For wireline participants, there are two principal mapping requirements: recipients of funds under the Alaska Plan must file (1) detailed middle mile maps on a yearly basis,[27] and (2) geocoded (address-specific)

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[23] Id.

[24] *See* https://www.usac.org/hc/tools/hubb.aspx (last visited 12/7/2018).

[25] *See* Connect American Fund Broadband Map, available at: https://data.usac.org/publicreports/caf-map/ (last visited 12/7/2018).

[26] *See* Exhibit E.

[27] *Report and Order and Further Notice of Proposed Rulemaking*, WC Docket 16-271, FCC 16-115, released August 31, 2016, at para 60 [hereinafter "Alaska Plan Order"].

locations for **new** broadband capable deployments.[28] There is no requirement to backfill all broadband capable locations that existed prior to the adoption of the Alaska Plan, at least at this time.

Certain mobile/wireless participants that rely on satellite backhaul to provide service must provide certifications regarding the appearance of new terrestrial middle mile that can be used and must incorporate any new facility into revised performance plans.[29] Mobile/wireless participants receiving $5 million in support/year must also provide drive test data demonstrating broadband speeds that meet Alaska Plan criteria.[30]

Alaska Plan Middle Mile Maps

The availability of middle mile facilities is used as a trigger in the Alaska Plan that drives performance obligations, and therefore, as noted, the FCC has required participants to file detailed middle mile maps in accordance with the specifications developed by both the Wireline Competition Bureau and the Wireless Telecommunications Bureau. On behalf of Alaska Plan participants, the Alaska Telecom Association (ATA) challenged the Bureau's middle mile mapping requirements in a petition for reconsideration, specifically the content, timing and accuracy specifications.[31]

On reconsideration, the FCC reiterated that Alaska Plan recipients must "file [yearly] maps of their fiber and microwave middle-mile networks that 'are or will be used to support their service in eligible areas'", which consist of "links and nodes within Alaska, including undersea cables located within territorial waters, connecting (1) 'major nodes;' (2) outdoor cell sites; (3) anchor institutions, such as schools, libraries, medical and healthcare providers, community colleges, and other institutions of higher education;

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[28] Alaska Plan Order, at para. 58 (stating: "[W]e will require all Alaska Plan participants to submit to USAC the geocoded locations for which they have newly deployed or upgraded broadband meeting the minimum speeds in their approved performance plans and their associated speeds. The geocoded location information should reflect those locations that are broadband-enabled where the company is prepared to offer voice and broadband service meeting the speeds committed to in the deployment plan and the relevant public interest obligations, within 10 business days.")

[29] Id at para. 102.

[30] Id. at para. 103.

[31] ATA, Petition for Reconsideration, WC Docket No. 16-271 (filed Oct. 10, 2017), available at: https://ecfsapi.fcc.gov/file/10102952211571/2017-10-10%20ATA%20Middle%20Mile%20Recon.pdf (last visited 12/7/2018).

and (4) terminating locations of links", including cell-site backhaul.[32] The FCC, however, temporarily relaxed the accuracy standards for middle mile facilities data for the 2018 mapping year to 50 meters unless carriers have data accurate to the 7.6 meter standard, due July 1, 2018, with a strict 7.6 meter standard applicable for 2019 and beyond.[33]

The Alaska Plan middle mile maps that were recently filed with the FCC have not been made available to the Commission. These maps would be much more detailed than transport facilities maps currently required from Inter-Exchange Carriers (IXCs) under 3 AAC 52.390(o) and would be partially responsive to the Legislative Budget Intent Language regarding mapping. Staff recently contacted a Universal Service Administrative Company (USAC) representative seeking access to Alaska Plan-required middle mile maps, but was informed that USAC considers those maps to be proprietary and confidential. On November 6, 2018, ATA filed comments in aid of this report, confirming that the geocoded Alaska Plan-required middle mile maps are confidential and not publically accessible.[34] The Commission has generally deferred to FCC decisions on confidentiality regarding filings made pursuant to FCC requirements,[35] so it would cut against that policy to use Alaska Plan-required middle mile maps to respond to the Legislative request without a carrier's voluntary disclosure or a more forceful Legislative directive to otherwise pursue confidential material and data.

Alaska Plan Newly Deployed Locations Mapping

As noted, along with other high cost recipients, Alaska Plan recipients must file biannual geocoded data for locations deployed or upgraded using high cost funds. The data is uploaded to the HUBB portal and rendered on a publically available Connect American Fund (CAF) map.[36] As noted, for Alaska Plan recipients, only newly deployed locations must be mapped at present. In Staff's view, this limits the current utility of the CAF map as a policy driver, but does demonstrate the potential to accurately detail underserved

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[32] Alaska Plan Order on Reconsideration, WC Docket 16-271, DA18-197, released February 28, 2018, at para. 4 and 7-10, available at: https://docs.fcc.gov/public/attachments/DA-18-197A1.pdf (last visited 12/7/2018).

[33] Id. at para. 16-20.

[34] *See* Comments of the Alaska Telecom Association, Docket I-17-004, filed November 6, 2018, at 3.

[35] *See e.g.*, Order U-17-050(2)/U-18-008(1), dated February 27, 2018, at 3.

[36] *See* Connect American Fund Broadband Map, available at: https://data.usac.org/publicreports/caf-map/ (last visited 12/7/2018).

and unserved locations if the requirement to geocode service availability for all carriers is ever implemented.

CAF II Mapping/Data Requirements (Alaska Communications)

As a price-cap carrier, AC was ineligible to participate in the Alaska Plan, however the FCC recognized AC's unique position among Connect America Phase II participants and adopted distinct requirements for AC.[37] AC receives 10-year support to deploy voice and broadband service to at least 31,571 locations under generally applicable speed and latency metrics. The bulk of those locations were required to be high-cost locations in census blocks that are unserved by an unsubsidized competitor, such as GCI Communications, Inc. (GCI).[38] However, up to 7,900 locations could be unserved locations that happen to be located within a census block that is partially unserved by an unsubsidized competitor. AC was required to file a performance plan identifying these specific locations by October 1, 2018, following a challenge process that required AC to notify any carrier identified in Form 477 data as providing service to the proposed partially served census block.[39]

During the challenge process, GCI identified 3,049 locations proposed by AC in partially served census blocks that it claimed it could provide broadband capable service, and the FCC agreed and accordingly disqualified the challenged locations.[40] The FCC granted AC a waiver of the October 1, 2018 deployment plan deadline to allow AC an additional 60 days to identify its final list of unserved locations.[41]

As for mapping requirements, AC is subject to similar geocoding requirements as Alaska Plan recipients as far as newly deployed broadband locations utilizing CAF funds, even

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[37] *See* Connect America Fund, Order, WC Docket 10-90, FCC 16-143, released October 31, 2016, available at https://docs.fcc.gov/public/attachments/FCC-16-143A1.pdf (last visited 12/7/2018) [hereinafter "AC CAF II Order"].

[38] Id. at para. 8, 32-35.

[39] Id. at para. 36, 43.

[40] Connect America Phase II Challenge Process, Order, WC Docket 14-93, DA 18-999, released September 28, 2018, at para. 18-19, available at: https://prodnet.www.neca.org/publicationsdocs/wwpdf/da18999.pdf (last visited 12/7/2018).

[41] Id. at para. 20-21.

locations identified before the geocoding requirement was adopted.[42] AC petition for limited waiver of the geocoding requirement for certain deployed locations was recently denied and AC was required to file geocodes for all locations by May of 2018.[43] Locations are depicted in the CAF Broadband Map.[44] Similar to Alaska Plan mapping requirements, Staff could not identify any requirement to provide geocoded data for prior deployments of broadband-capable service that did not rely specifically on CAF funding to deploy. Incidentally, AC is employing fixed wireless solutions to meet many of its deployment obligations under the CAF II program and has provided the Commission with a mapped example of the reach of its fixed wireless deployments in North Pole, Ninilchik, Sterling/Funny River, and Kalifornsky.[45]

A-CAM Mapping/Data Requirements (Alaska Telephone Company and Summit Telephone)

Two local exchange carriers that are ETCs elected to participate in the A-CAM high cost program instead of the Alaska Plan. A-CAM participants are required "starting in 2017, and on a recurring basis thereafter, to submit to USAC the geocoded locations to which they have newly deployed broadband", and to identify the "number of locations at the minimum speeds required by our rules."[46] Unlike the Alaska Plan and CAF II participants, it appears that A-CAM participants, by March 1, 2019, must also file geocodes for "pre-existing broadband-capable locations".[47] So it would appear that A-CAM data contributions are subject to heightened requirements and should provide a more

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[42] Connect America Fund, Report and Order, WC Docket 10-90, FCC 13-73, released May 22, 2013, at para. 34-35, available at: https://docs.fcc.gov/public/attachments/FCC-13-73A1.pdf (last visited 12/7/2018).

[43] Connect America Fund, AC Limited Waiver Request, Order, WC Docket 10-90, DA 18-337, released April 4, 2018, at para. 12-14, available at: https://docs.fcc.gov/public/attachments/DA-18-337A1.pdf (last visited 12/7/2018).

[44] *See* Connect America Fund Broadband Map, available at: https://data.usac.org/publicreports/caf-map/ (last visited 12/7/2018).

[45] *See* Exhibit(s) F.

[46] *See* Connect America Fund, ETDC Annual Reports and Certifications, Report and Order, Order and Order on Reconsideration, and Further Notice of Proposed Rulemaking, WC Docket 14-58, FCC 16-33, released March 30, 2016, at para. 210, available at: https://docs.fcc.gov/public/attachments/FCC-16-33A1.pdf (last visited 12/7/2018).

[47] Id. at para 213.

complete picture of precisely where broadband service is available, at least within the service territories of Alaska Telephone Company and Summit Telephone.

Commission Required Maps

With the recent elimination of standalone ETC annual reporting in 3 AAC 53.460(a), in favor of a recently pared down Form 481 required by the FCC, the Commission no longer receives relevant service territory maps for either wireless or wireline ETCs. At present, the only substantial mapping required by the Commission, aside from maps depicting service areas for certificated local exchange carriers, is for facilities-based IXCs to file maps pursuant to 3 AAC 52.399(o), which reads as follows:

> On or before April 30 of each year, an interexchange carrier shall file with the commission, in accordance with 3 AAC 48.095, a map or a listing identifying each location where the carrier owns or controls interexchange facilities and identifying each type of facility that is sited at each location. After an initial filing, absent changes to the facilities map or listing, the interexchange carrier shall file verification, in accordance with 3 AAC 48.095, that no changes to the map or listing have occurred. The map or listing must include (1) satellite and earth station radio system facilities and links; (2) microwave and other non-satellite-related radio facilities and links; (3) metallic-based cable and wire facilities; and (4) non-metallic-based cable and wire facilities.[48]

The Commission has, to date, only received network facilities maps for two IXCs, GCI and Alascom, Inc. (AT&T).[49] It is unclear if other IXCs affiliated with local exchange carriers have facilities that would satisfy the depiction in 3 AAC 52.390(o) as each of those LEC-affiliated IXCs maintain that they are IXC resellers and the Commission has not undertaken to challenge that description. Staff notes that at least one IXC, MTA Long Distance, has recently purchased a broadband-capable network outside MTA's local exchange territory.[50] Additionally, MTA recently issued an ex parte with FCC staff that

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[48] 3 AAC 52.390(o).

[49] *See* Exhibits G and H.

[50] *See* Order U-16-009(2), Order Granting Application to Discontinue Service, Cancelling Certificate of Public Convenience and Necessity, Withdrawing Tariff, and Closing Docket, dated March 31, 2016, at 3 (noting that the Fairbanks fiber network previously operated by a Golden

noted over 1,100 miles of fiber network with more than 5,000 location capable of receiving fiber-to-the-premise broadband service.[51]

Though not pursuant to 3 AAC 52.399(o), AC did provide the Commission with a network map associated with its widespread service territory.[52]

Staff has additionally developed its own Alaska middle mile map as part of the Commission's 2017 Legislative Broadband Report.[53]

Staff notes that at present the Commission does not specifically utilize mapping for the disbursement of any state funding. Staff notes that Alaska Universal Service Fund network support to wireline local exchange carriers was recently amended to set support based on historic values and that support is not targeted specifically to areas that are considered underserved or unserved.[54] As such, the Commission does not currently have a regulatory purpose justifying more detailed facilities or service availability maps. However, the Commission's recent decision to sunset the AUSF in 2023 and undertake a detailed review of the AUSF in 2021, adopted in Docket R-18-001, could change the direction of the AUSF considerably and could make an independent case for the Commission to require the type of detailed mapping called for by the Legislative Budget Intent Language, especially if the Commission undertakes to explicitly fund broadband-capable networks using specific metrics instead of awarding general purpose network funding to qualifying carriers that is currently in place.

In the event a regulatory purpose for a granular serviceability map comes to fruition, it is worth noting that at least one state, Georgia, has, through legislation, created a public/private partnership to create underserved broadband mapping and associated databases for purposes of creating a program of loans and grants to providers willing to

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Valley Electric Association affiliate, AlasConnect, had been sold to MTA Communications, LLC d/b/a MTA Long Distance an noting that MTA already held a statewide IXC Certificate No. 505, rendering GVEA's IXC certificate unused and superfluous).

[51] *See generally* Alaska Telecom Association Ex Parte, FCC Docket WC 16-271, dated October 8, 2018, available at https://prodnet.www.neca.org/publicationsdocs/wwpdf/100918otz.pdf (last visited 12/7/2018).

[52] *See* Exhibit I

[53] *See* Exhibit J.

[54] *See generally*, Docket R-18-001.

extend facilities to unserved areas in that state.[55] The assertion of authority rests in the use of state rights of way to cite broadband-capable facilities, and providers seeking to participate in the loan/grant program receive priority if they provide mapping data.[56] The legislation also requires local governments to participate in the mapping broadband service availability within their jurisdictions.[57] The Georgia approach incentivizes potential recipients of state funding to provide mapping data necessary to ensure the funding is efficiently spent, and could serve as a good model for Alaska if targeted broadband funding is made available at some point.

Mapping Going Forward

The undeniable conclusion of the foregoing is that the Commission cannot comply with the specific mapping request included in the Legislature's Budget Intent Language because, for practical purposes, the data does not exist and the Commission has a limited mandate that does not explicitly reach broadband service, at least beyond its obligations regarding designation of ETCs. Together these facts make it difficult to if not impossible to require broadband providers not otherwise subject to the Commission's limited jurisdiction to file responsive data or maps.

Staff has been monitoring a flurry of mapping activity at the federal level, including several recent *ex parte* communication notifications relevant to the material discussed herein, primarily revolving around solutions to better balance the FCC's desire for more granular Form 477 data and maps to help identify underserved and unserved areas nationwide and to guide important policy decisions, and providers' contention that there is no business purpose for more granular data and that the costs outweigh the benefits of any augmented data requirement.

- The American Cable Association, in an October 19, 2018, ex parte with FCC staff noted that street segment data, which as discussed above is less granular than address-specific geocoding, would help balance the FCC's request for more detailed mapping while acknowledging the significant cost associated with

[55] *See* http://www.legis.ga.gov/Legislation/20172018/179105.pdf (last visited 12/7/2018).
[56] Id.
[57] Id.

capturing data for which providers have no independent business purpose.[58] While maintaining that street segment data similarly has no independent business purpose, the association represents it as a "doable", provided that a publically available maps that visually show all street segments" are made available.[59] The association noted that rural areas often don't have street names or designations that are consistent, making any data requirement more complicated.[60] If street segments are used, the association counsels that (1) street segments only be required on relatively large census blocks exceeding 2 square miles since the partially-served census block overrepresentation issue is greatest for these blocks, (2) that small operators be given longer lead times in converting to street segment data, and (3) limit data submission under Form 477 to annual from current biannual reporting.[61]

- AT&T, in an October 12, 2018, ex parte with FCC staff, suggests a four step process for achieving an address-based database for broadband service availability: (1) collecting street address information independent of service status information, (2) standardizing geocoded address submissions to ensure same format and eliminate duplicates, (3) crowdsourcing confirmation of addresses by consumers, and (4) using a completed geocoded address database, begin the submission process for service status of each address in the database based on the standard 10-business days to serve on request rubric.[62] AT&T, for its part, criticized the road segment proposal, noting that it would only "display the roads where broadband is available, but it would not provide any information on

[58] *See* American Cable Association Ex Parte, WC Docket 11-10, dated October 19, 2018, at 1-3, available at: http://www.americancable.org/fcc-ex-parte-re-modernizing-the-form-477-data-program/ (last visited 12/7/2018).
[59] Id. at 4-6.
[60] Id. at fn. 3.
[61] Id. at 8-9.
[62] *See* AT&T Ex Parte, WC Docket 11-10, dated October 12, 2018, erratum issued October 16, 2018, at 3-5, available at https://prodnet.www.neca.org/publicationsdocs/wwpdf/101618att2.pdf (last visited 12/7/2018).

locations and characteristics of areas that are unserved", leaving doubt as to the number of homes/locations that remain unserved.[63]

- USTelecom, in an October 17, 2018, ex parte with FCC staff, expressed support for the FCC's efforts to identify underserved and unserved locations, but maintained that sub-census block proposals are not technically feasible and risk inaccurate data.[64] The association noted that carriers generally "know where their network is and where existing and some potential customers are located, however this information is available via street addresses – it is not geocoded".[65] The association noted that all geocoding software isn't set up the same way, and therefore "can produce conflicting results."[66] The association suggests, similar to AT&T, that the FCC first create a unified geocoded address database before asking carriers to indicate the addresses they can serve.[67] While street segment data could be compiled, the association notes that given similar efforts required for less accurate results, the FCC would be better off compiling an address-specific database.[68]

- For a more local opinion, GCI, in an October 25, 2018, ex parte with FCC staff, estimated that 20% of Alaska locations do not have standard street addresses, noting that the percentage likely jumps to 75% outside more populated areas.[69] While GCI maintains a database of "serviceable locations", the data is not necessarily accurate until service is actually provided since the availability of cable plant or fixed wireless service in the vicinity does not mean that no barrier to

---

[63] Id. at 6.

[64] USTelecom Ex Parte, WC Docket 11-10, dated October 17, 2018, at 1, available at: https://prodnet.www.neca.org/publicationsdocs/wwpdf/101718ustelecom.pdf (last visited 12/7/2018).

[65] Id.

[66] Id.

[67] Id. at 2.

[68] USTelecom Ex Parte, at 2.

[69] GCI Ex Parte, WC Docket 11-10, dated October 25, 2018, at 1, available at: https://prodnet.www.neca.org/publicationsdocs/wwpdf/103018gci.pdf (last visited 12/7/2018).

service exists.[70] GCI states that "requiring providers to certify that their data accurately reflect the serviceability of every location (or other unit of reporting) would place a phenomenal burden on filers, particularly in remote areas … to the point where it [risks taking] away resources from actual deployment."[71]

The Commission appreciates the opportunity to provide the Legislature with information on the broadband Internet serviceability mapping resources within Alaska both today and in the near future. The Commission is encouraged that the Legislature is interested in this important topic and looks forward to providing what expertise it can in any legislative efforts that may follow.

[70] Id. at 2.

[71] Id. at 3.

Exhibit A

FCC Broadband Map (Census block containing the RCA offices)

Location Summary | Fixed Broadba

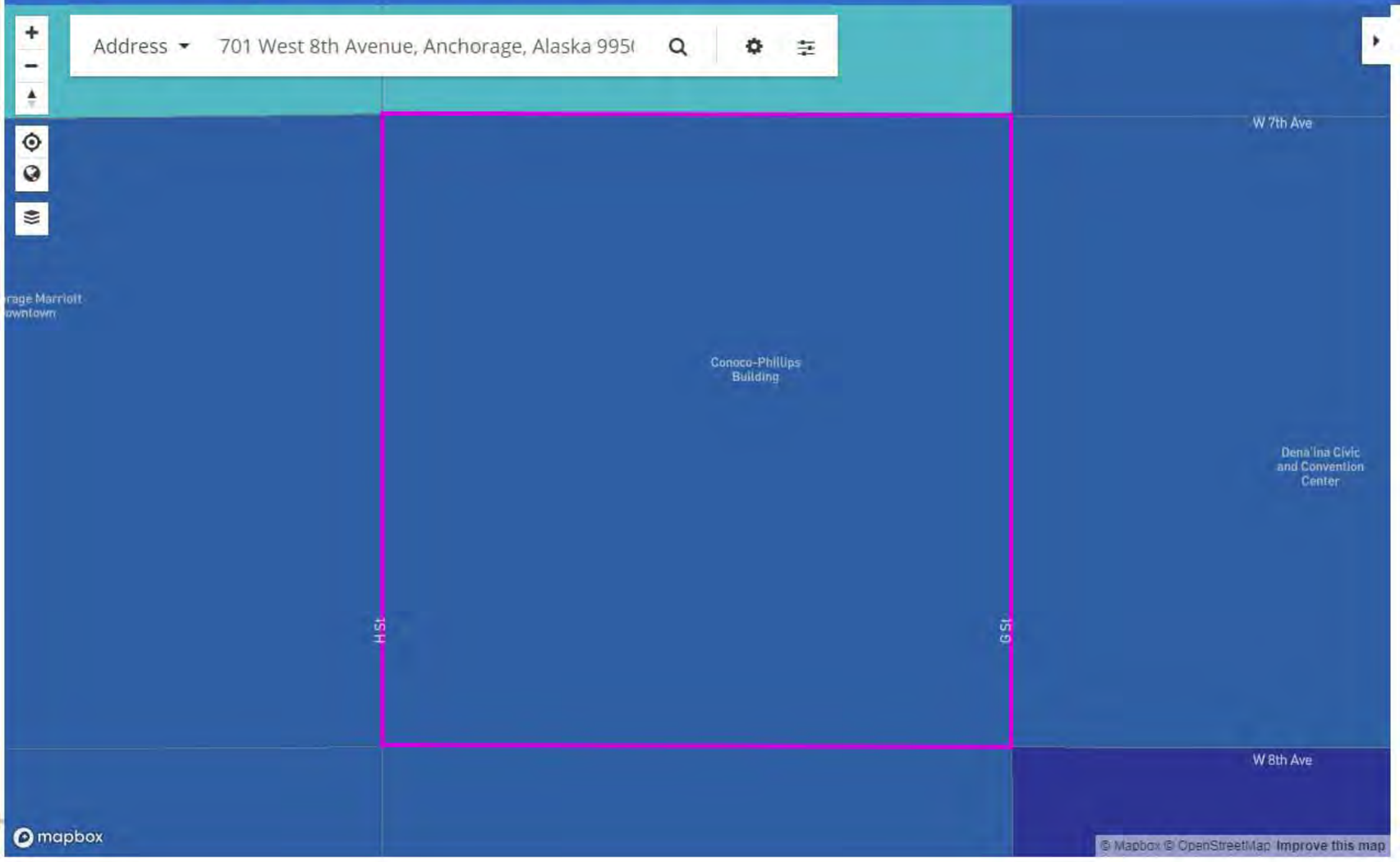
https://broadbandmap.fcc.gov/#/location-summary?version=jun2017&place_name=701%20West%208th%20Avenue,%20Anchorage,%20Alaska%2099501,%20United%20States&lat=61.214703&lon=-149.896080&tech=acfosw&speed=25_3&vlat=61.2151090...

Federal Communications Commission

Fixed Broadband Deployment

Home | Location Summary | Area Summary | Area Comparison | Provider Detail | Data Download | About

Address: 701 West 8th Avenue, Anchorage, Alaska 995



All Providers Reporting Service

Census block ID: 020200011001035

Number of Fixed Residential Broadband Providers

0 1 2 3 4 6 12 or more

Broadband

Technology ADSL, Cable, Fiber, Fixed Wireless, Satellite, Other
Speed ≥ 25/3 Mbps
Date June 2017 *(latest public release)*

Provider	Tech	Down (Mbps)	Up (Mbps)
General Communication, Inc.	Cable	1000	50
Borealis Broadband Inc.	Fixed Wireless	25	25
dishNET Holding, LLC	Satellite	25	3
Alaska Communications Systems Holdings, Inc.	ADSL	25	2
VSAT Systems, LLC	Satellite	2	1.3

Exhibit A
FCC Broadband Map
RCA Office (Downtown Anchorage)

Exhibit B

FCC Broadband Map (Census block for Willow, Alaska)

Location Summary | Fixed Broadbar

https://broadbandmap.fcc.gov/#/location-summary?version=jun2017&place_name=Willow,%20Alaska,%20United%20States&lat=61.747200&lon=-150.037500&tech=acfosw&speed=25_3&vlat=61.706065472559885&vlon=-149.887382&vzoom=10.695849311...

Federal Communications Commission

Fixed Broadband Deployment

Home | Location Summary | Area Summary | Area Comparison | Provider Detail | Data Download | About



All Providers Reporting Service

Census block ID: 021700004022001

Number of Fixed Residential Broadband Providers

0 1 2 3 4 6 12 or more

Broadband

Technology ADSL, Cable, Fiber, Fixed Wireless, Satellite, Other
Speed ≥ 25/3 Mbps
Date June 2017 *(latest public release)*

Provider	Tech	Down (Mbps)	Up (Mbps)
Matanuska Telephone Association, Inc.	ADSL	40	15
dishNET Holding, LLC	Satellite	25	3
Matanuska Telephone Association, Inc.	ADSL	20	2

Exhibit B
FCC Broadband Map
Willow, Alaska

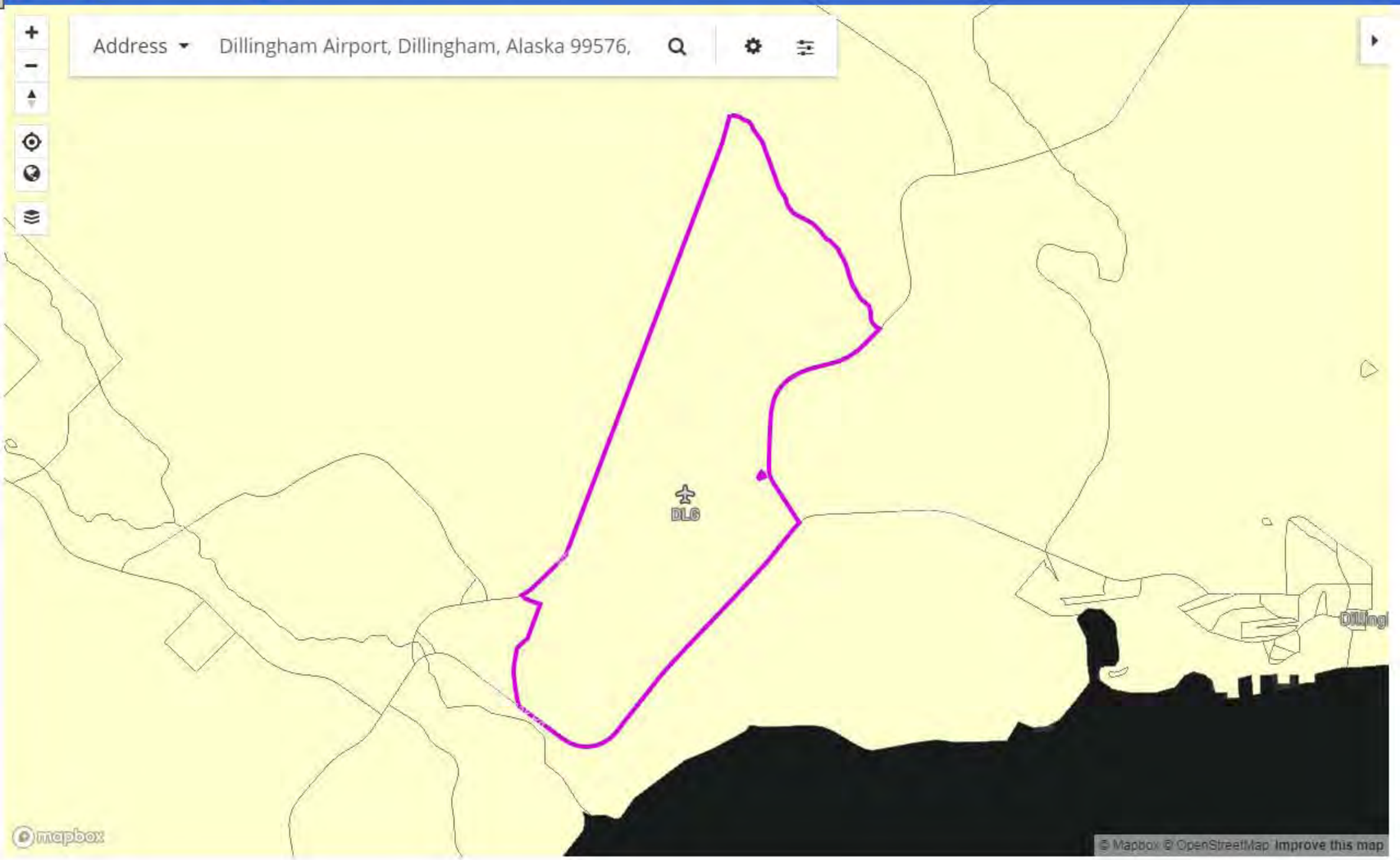
Exhibit C

FCC Broadband Map (Census block containing the Dillingham Airport)

Location Summary | Fixed Broadba

https://broadbandmap.fcc.gov/#/location-summary?version=jun2017&place_name=Dillingham%20Airport,%20Dillingham,%20Alaska%2099576,%20United%20States&lat=59.042750&lon=-158.513520&tech=acfosw&speed=25_3&vlat=59.046700492659454&...

Home | Location Summary | Area Summary | Area Comparison | Provider Detail | Data Download | About



All Providers Reporting Service

Census block ID: 020700002001020

Number of Fixed Residential Broadband Providers

0 1 2 3 4 6 12 or more

Broadband

Technology ADSL, Cable, Fiber, Fixed Wireless, Satellite, Other
Speed ≥ 25/3 Mbps
Date June 2017 *(latest public release)*

Provider	Tech	Down (Mbps)	Up (Mbps)
Nushagak Electric & Telephone Cooperative, Inc.	ADSL	6	2
Nushagak Electric & Telephone Cooperative, Inc.	Cable	6	2
dishNET Holding, LLC	Satellite	2	0.2

Federal Communications Commission
445 12th Street SW, Washington, DC 20554

Phone: 1-888-225-5322

TTY: 1-888-835-5322

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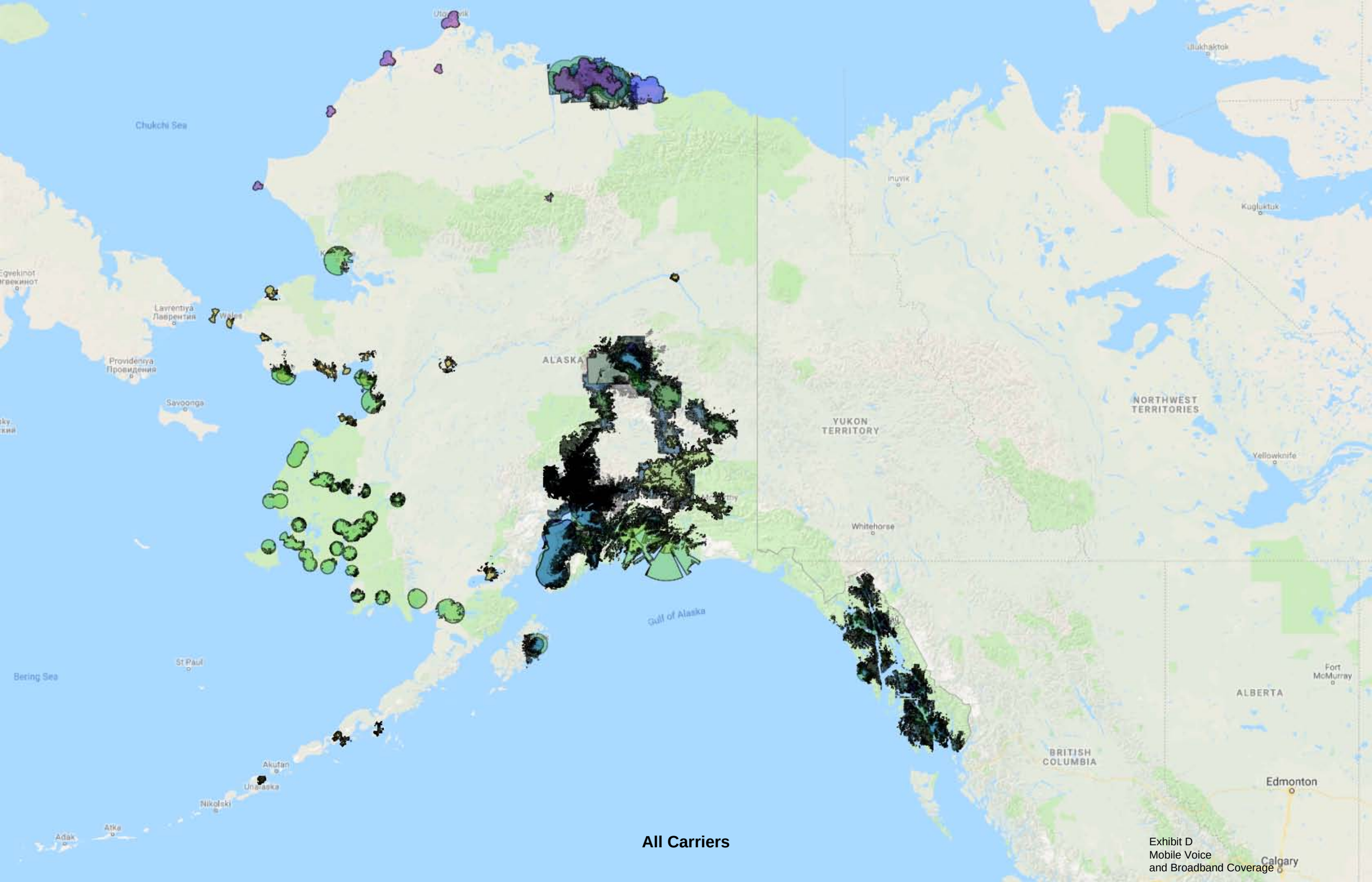
CATEGORIES
About the FCC
Proceedings & Actions
Licensing & Databases

BUREAUS & OFFICES
Consumer
Enforcement
Inspector General

Exhibit C
FCC Broadband Map
Dillingham Airport

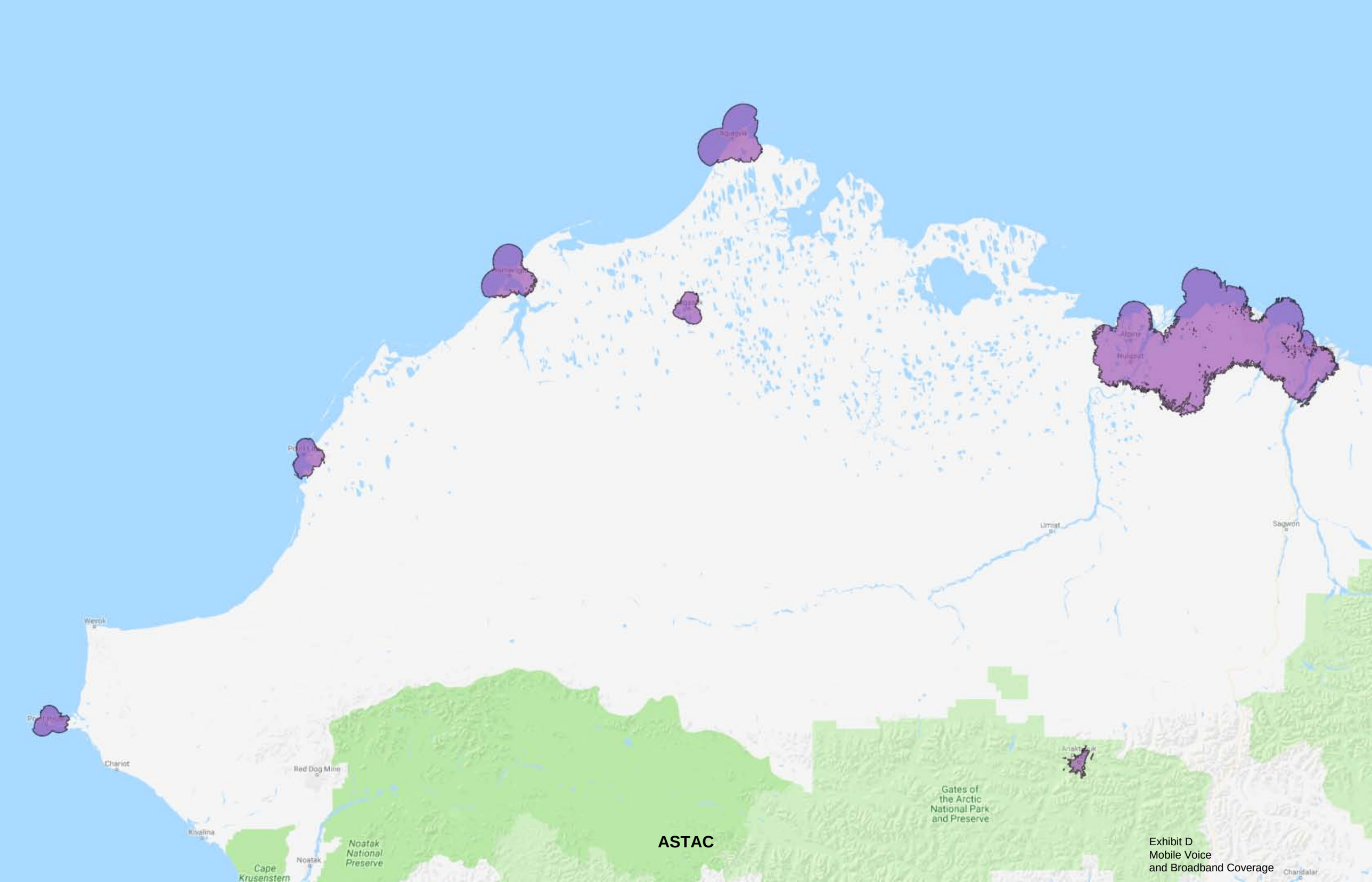
Exhibit D

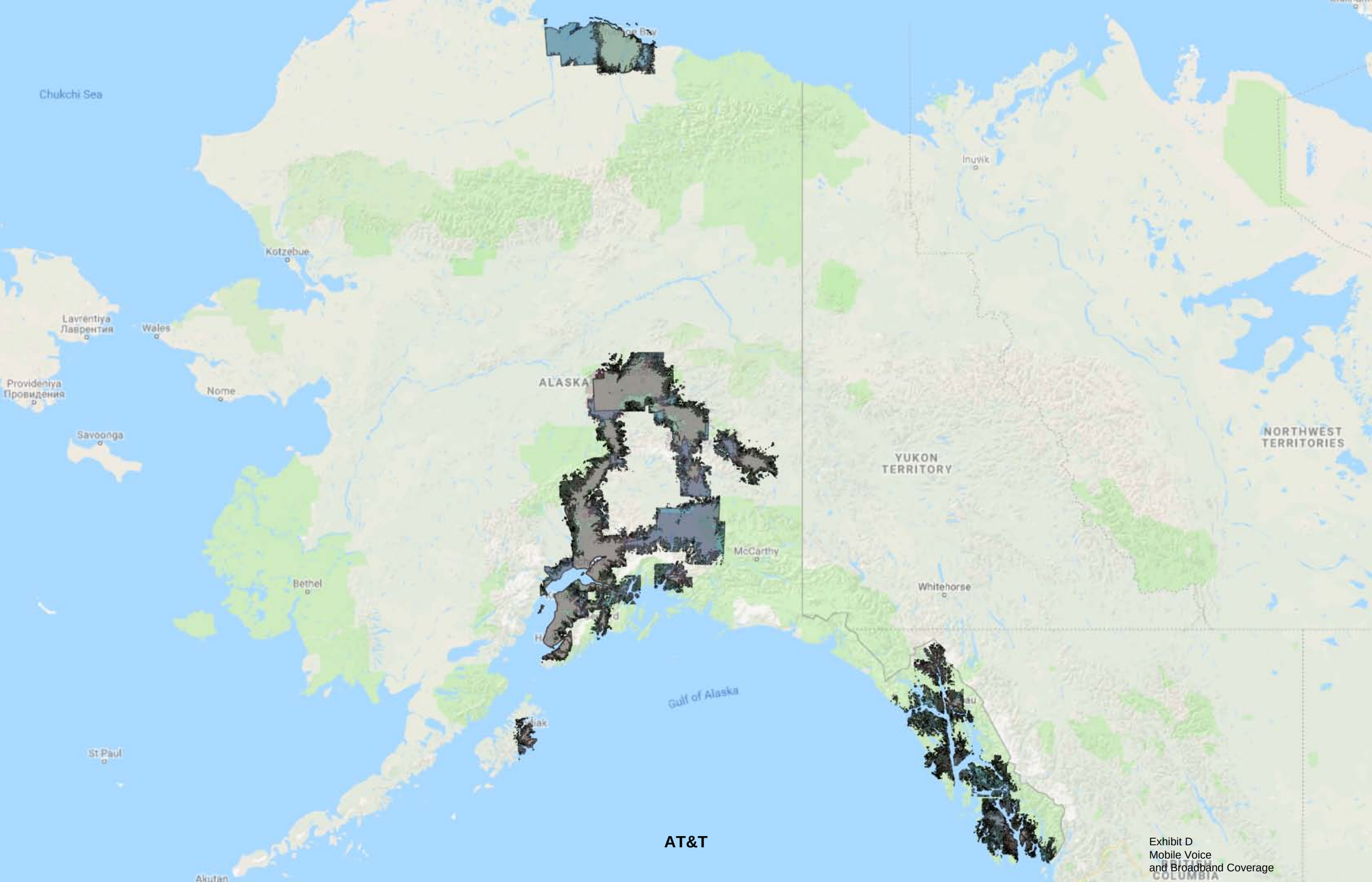
Mobile Voice and Broadband Coverage



All Carriers

Exhibit D
Mobile Voice
and Broadband Coverage


Wainwright
Point Lay
Atqasuk
Nuiqsut
Umiat
Sagwon
Wainwright
Wevok
Chariot
Red Dog Mine
Kivalina
Noatak
Noatak National Preserve
Cape Krusenstern
Gates of the Arctic National Park and Preserve
Anaktuvuk Pass
ASTAC
Exhibit D
Mobile Voice
and Broadband Coverage
Chandalar



AT&T

Exhibit D
Mobile Voice
and Broadband Coverage

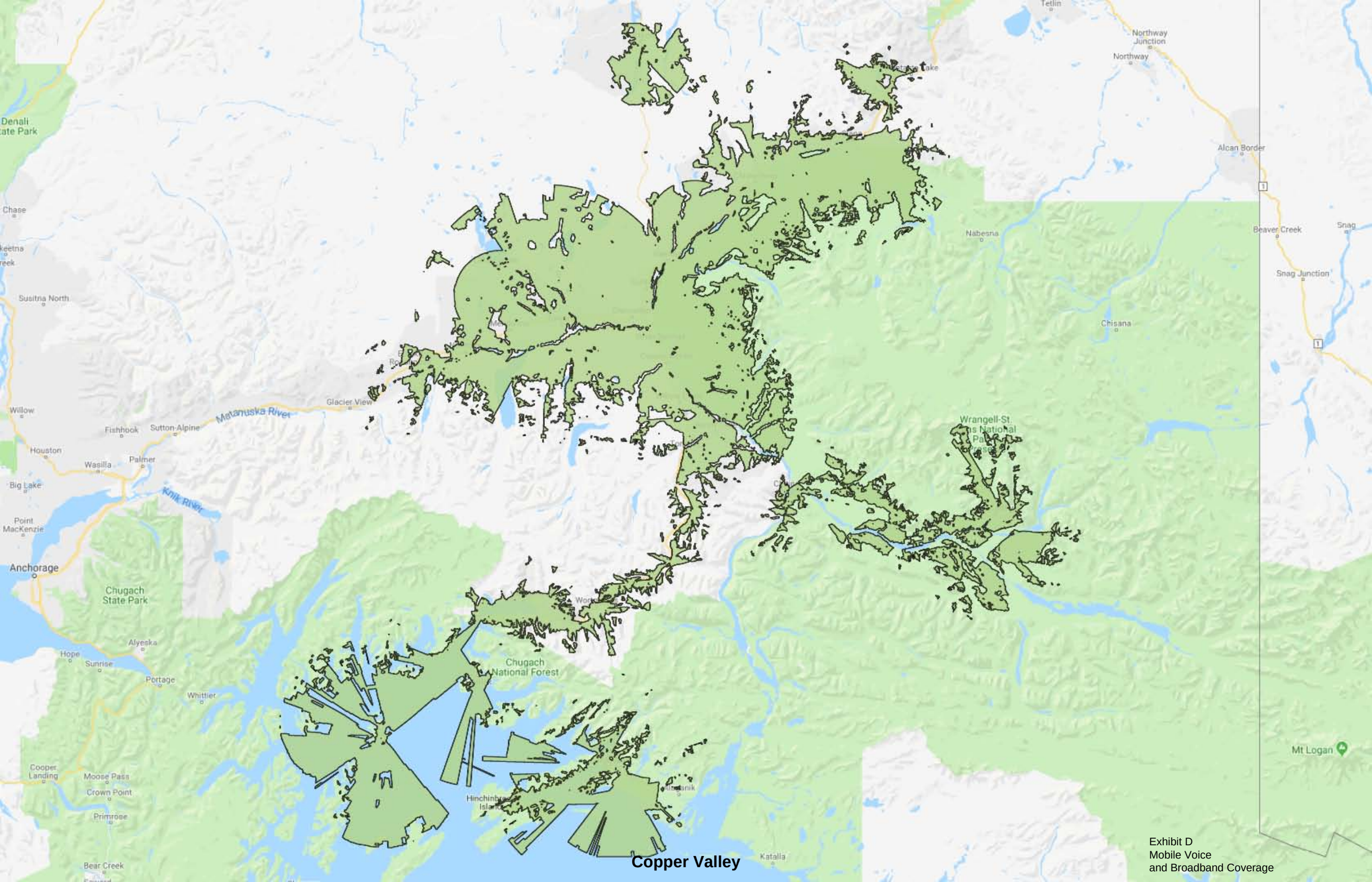
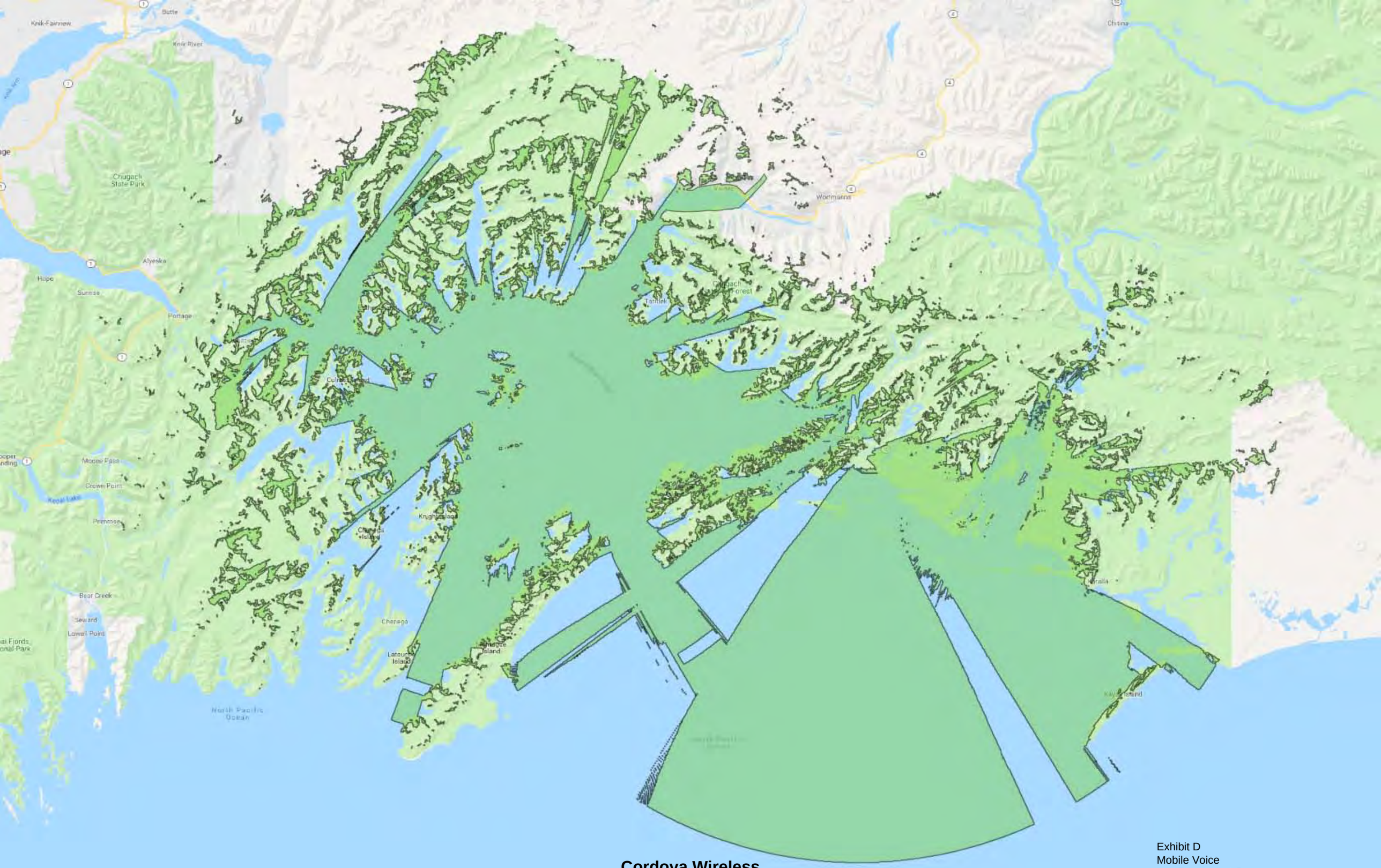
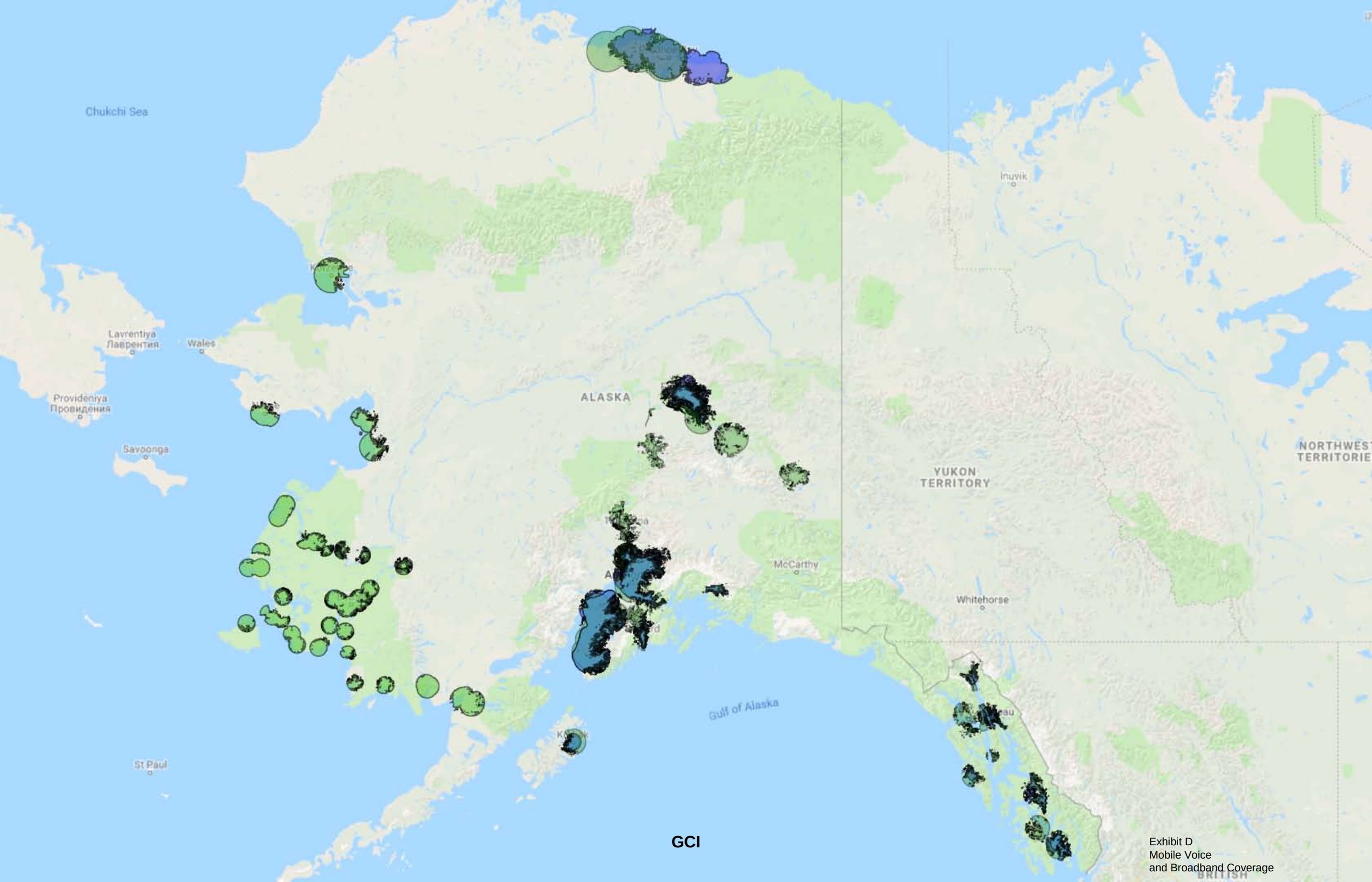


Exhibit D
Mobile Voice
and Broadband Coverage



Cordova Wireless

Exhibit D
Mobile Voice
and Broadband Coverage



GCI

Exhibit D
Mobile Voice
and Broadband Coverage

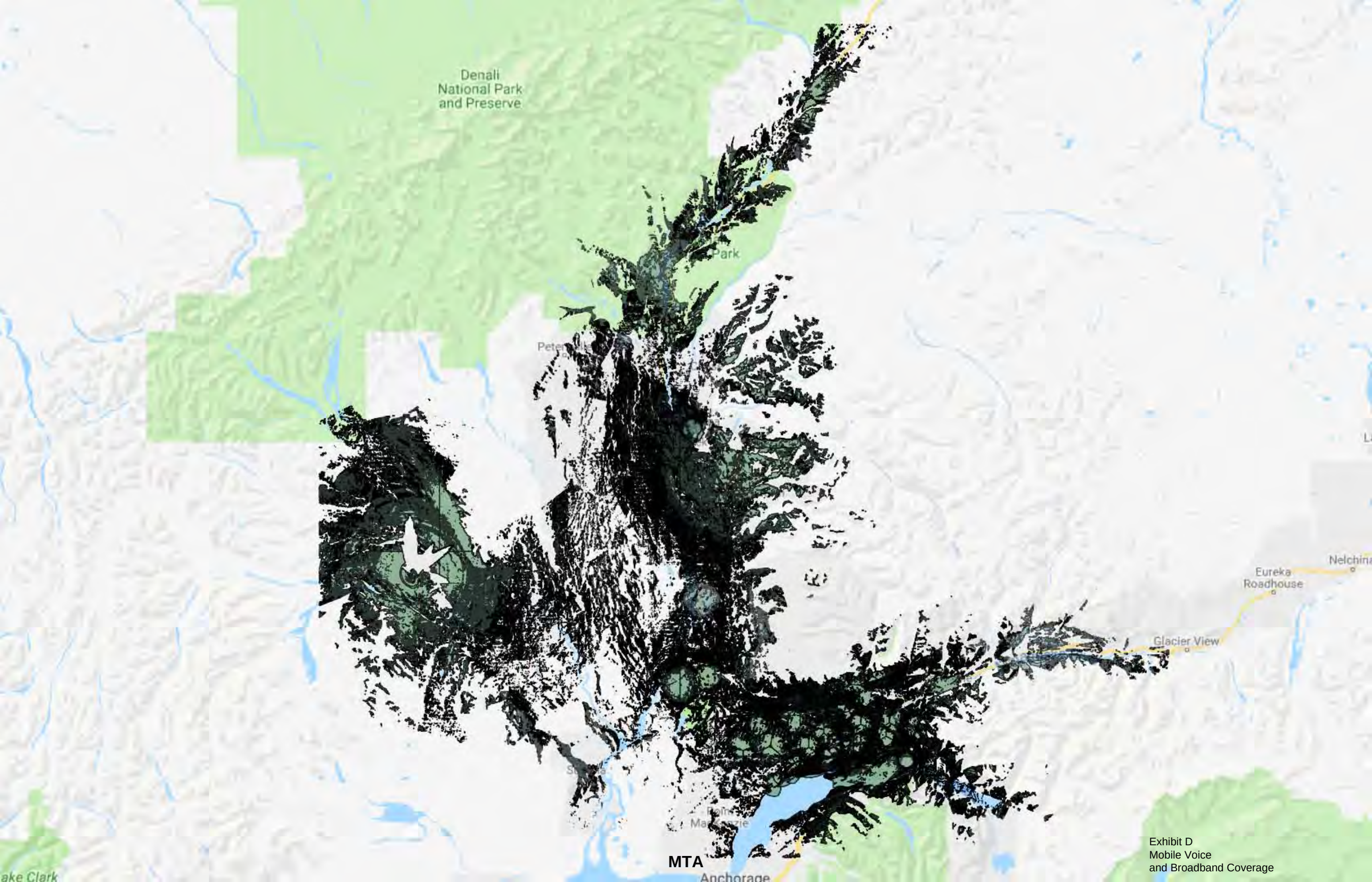
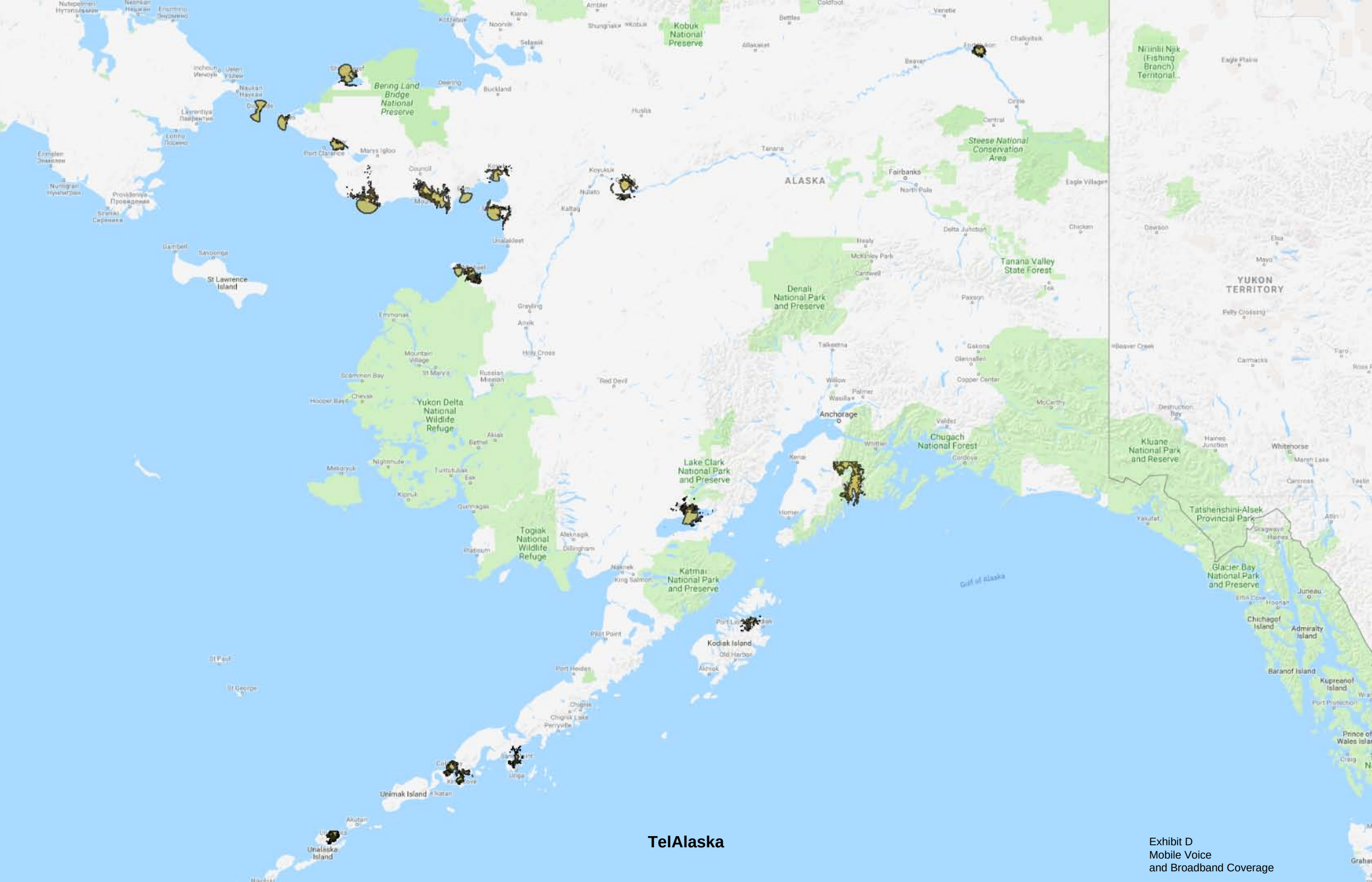
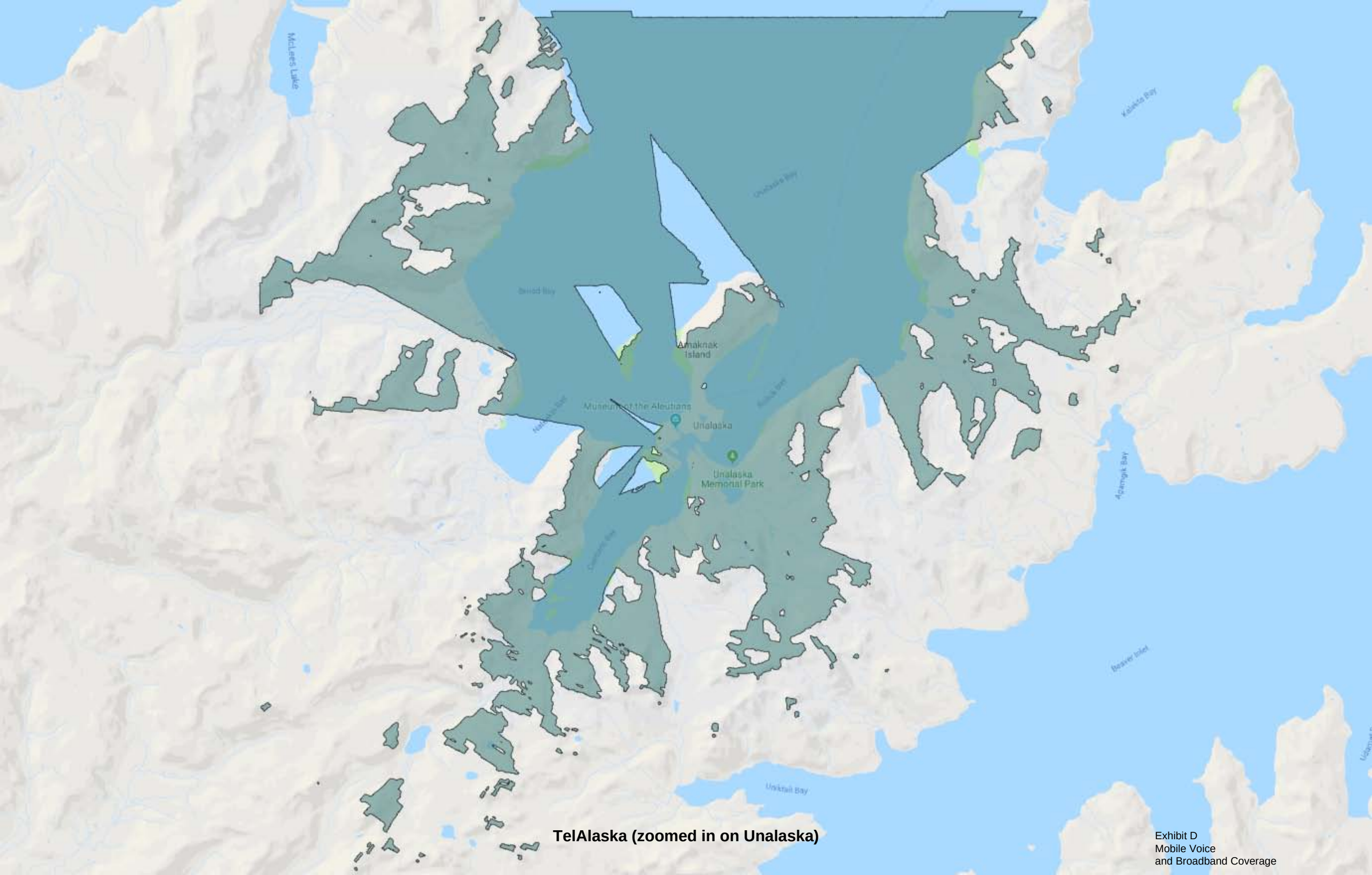


Exhibit D
Mobile Voice
and Broadband Coverage



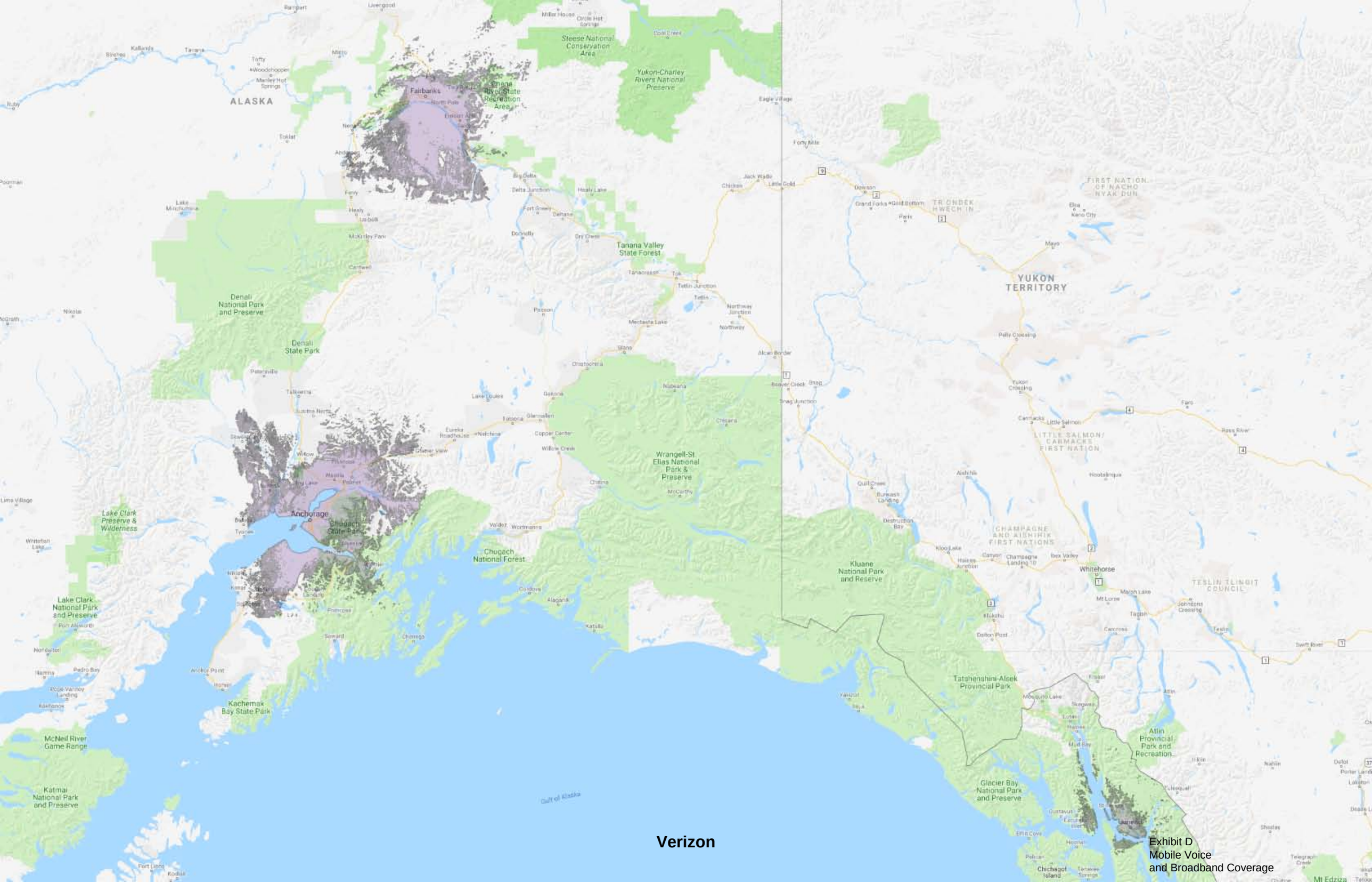
TelAlaska

Exhibit D
Mobile Voice
and Broadband Coverage



TelAlaska (zoomed in on Unalaska)

Exhibit D
Mobile Voice
and Broadband Coverage



Verizon

Exhibit D
Mobile Voice
and Broadband Coverage

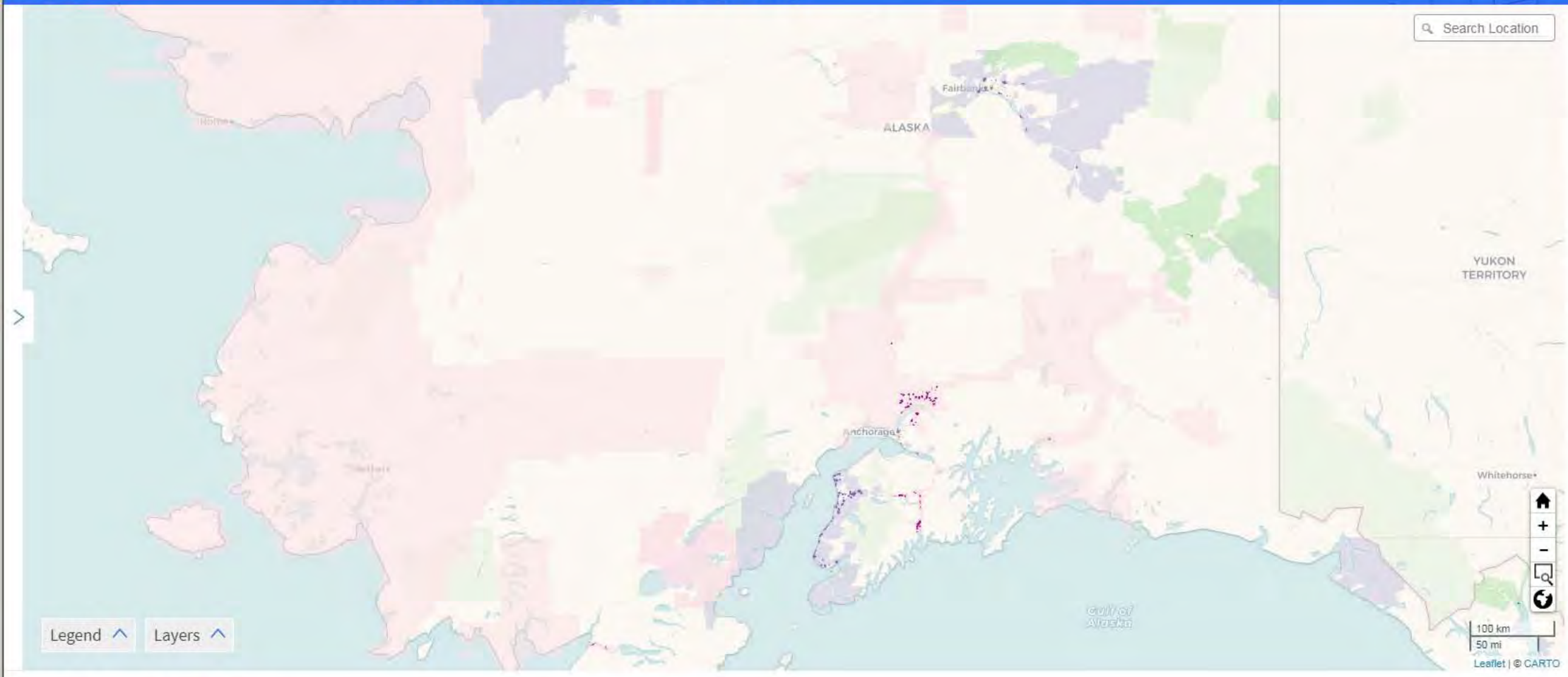
Exhibit E

Universal Service Administrative Company Connect America Fund Broadband Maps

Connect America Fund Broadband

https://data.usac.org/publicreports/caf-map/

Connect America Fund Broadband Map



Fund
All Funds

State
AK

Company Name
Search Company Name

Speed (Applicable only to Local Data)
All Speeds

Deployment Year
All Years

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State Data | Local Data

Filtered by: State

Displaying 1-13 of 13 records | Download Data

State	Fund	Company Name ▲	Deployment Year	Locations Obligation	Locations Deployed	Total Support Disbursed
AK	AK Plan	ADAK EAGLE ENTERPRISES, LLC	2017	-	293	$333,000.00

Filtered by: State

Displaying 1-13 of 13 records | Download Data

State	Fund	Company Name ▲	Deployment Year	Locations Obligation	Locations Deployed	Total Support Disbursed
AK	AK Plan	ADAK EAGLE ENTERPRISES, LLC	2017	-	293	$333,000.00
AK	CAF II	ALASKA COMMUNICATIONS SYSTEMS HOLDINGS, INC.	2015	-	5,331	$0.00
AK	CAF II	ALASKA COMMUNICATIONS SYSTEMS HOLDINGS, INC.	2016	-	7,114	$4,930,905.00
AK	CAF II	ALASKA COMMUNICATIONS SYSTEMS HOLDINGS, INC.	2017	-	7,481	$24,625,113.00
AK	ACAM	ALASKA POWER & TELEPHONE, INC.	2017	-	248	$6,446,981.28
AK	AK Plan	AMERICAN BROADBAND COMMUNICATIONS ET AL.	2017	-	2,369	$5,391,870.00
AK	AK Plan	ARCTIC SLOPE TELEPHONE ASSOCIATION COOPERATIVE, INC.	2017	-	202	$3,135,240.00
AK	AK Plan	BRISTOL BAY TELEPHONE COOPERATIVE	2017	-	103	$1,136,604.00
AK	AK Plan	CITY OF KETCHIKAN	2017	-	1,587	$4,217,490.00
AK	AK Plan	COPPER VALLEY TELEPHONE COOPERATIVE	2017	-	44	$11,307,498.00
AK	AK Plan	CORDOVA TEL COOP	2017	-	4	$2,316,234.00
AK	AK Plan	GCI HOLDINGS, INC.	2017	-	432	$3,525,624.00
AK	AK Plan	MATANUSKA TELEPHONE ASSOCIATION, INC.	2017	-	5,370	$18,720,342.00

Show 25 records/page

1 of 1 pages

Connect America Fund Broadband

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All Funds

State

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Company Name

ALASKA COMMUNICATIONS SYSTEMS HOLDINGS, INC.

Search Company Name

Speed (Applicable only to Local Data)

All Speeds

Deployment Year

All Years

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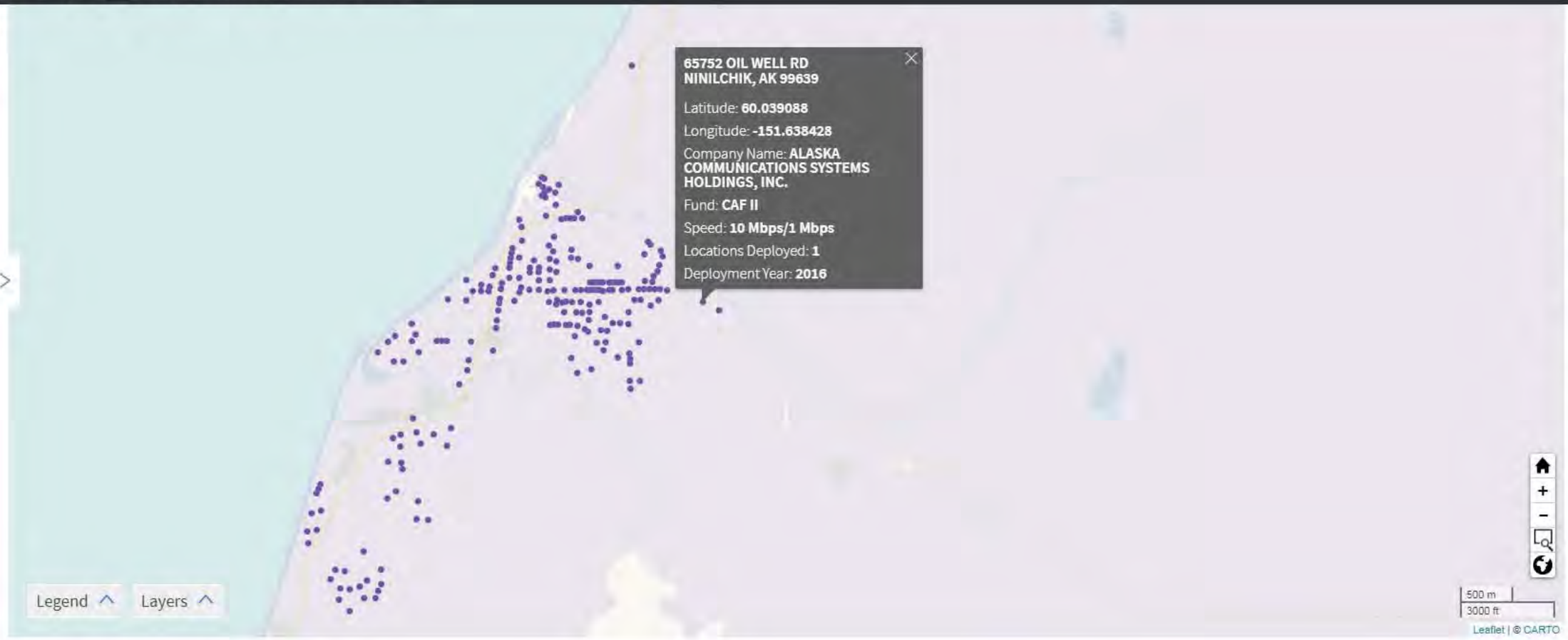
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State	Fund	Company Name	Deployment Year	Locations Obligation	Locations Deployed	Total Support Disbursed
AK	CAF II	ALASKA COMMUNICATIONS SYSTEMS HOLDINGS, INC.	2015	-	5,331	$0.00
AK	CAF II	ALASKA COMMUNICATIONS SYSTEMS HOLDINGS, INC.	2016	-	7,114	$4,930,905.00
AK	CAF II	ALASKA COMMUNICATIONS SYSTEMS HOLDINGS, INC.	2017	-	7,481	$24,625,113.00

Exhibit E
USAC CAF Maps



All Funds

State

AK

Company Name

ALASKA COMMUNICATIONS SYSTEMS HOLDINGS, INC.

Search Company Name

Speed (Applicable only to Local Data)

All Speeds

Deployment Year

All Years

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AK	CAF II	ALASKA COMMUNICATIONS SYSTEMS HOLDINGS, INC.	2016	-	7,114	$4,930,905.00
AK	CAF II	ALASKA COMMUNICATIONS SYSTEMS HOLDINGS, INC.	2017	-	7,481	$24,625,113.00

Exhibit E
USAC CAF Maps



State
AK

Company Name
ALASKA COMMUNICATIONS SYSTEMS HOLDINGS, INC.
Search Company Name

Speed (Applicable only to Local Data)
All Speeds

Deployment Year
All Years

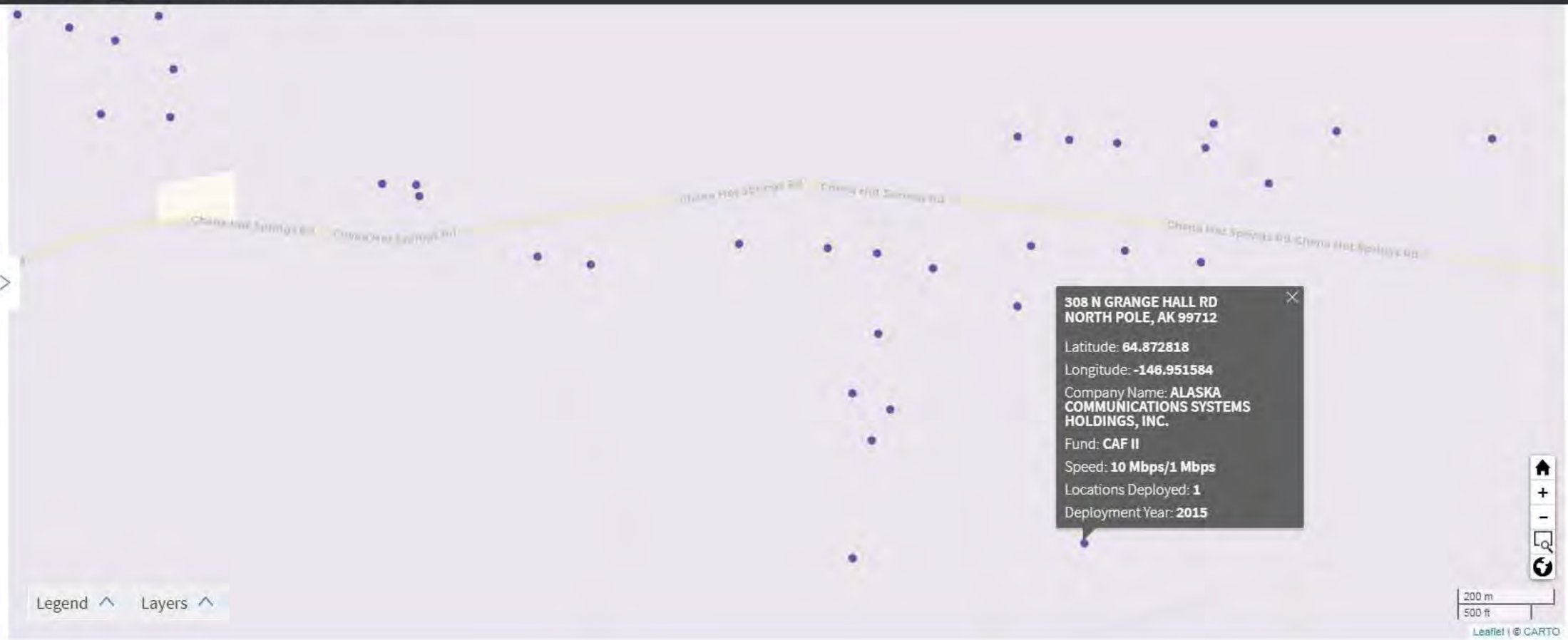
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AK	CAF II	ALASKA COMMUNICATIONS SYSTEMS HOLDINGS, INC.	2016	-	7,114	$4,930,905.00
AK	CAF II	ALASKA COMMUNICATIONS SYSTEMS HOLDINGS, INC.	2017	-	7,481	$24,625,113.00



All Funds

State

AK

Company Name

ALASKA COMMUNICATIONS SYSTEMS HOLDINGS, INC.

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Speed (Applicable only to Local Data)

All Speeds

Deployment Year

All Years

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AK	CAF II	ALASKA COMMUNICATIONS SYSTEMS HOLDINGS, INC.	2016	-	7,114	$4,930,905.00
AK	CAF II	ALASKA COMMUNICATIONS SYSTEMS HOLDINGS, INC.	2017	-	7,481	$24,625,113.00

Connect America Fund Broadband

https://data.usac.org/publicreports/caf-map/



State

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Company Name

ALASKA COMMUNICATIONS SYSTEMS HOLDINGS, INC.

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Speed (Applicable only to Local Data)

All Speeds

Deployment Year

All Years

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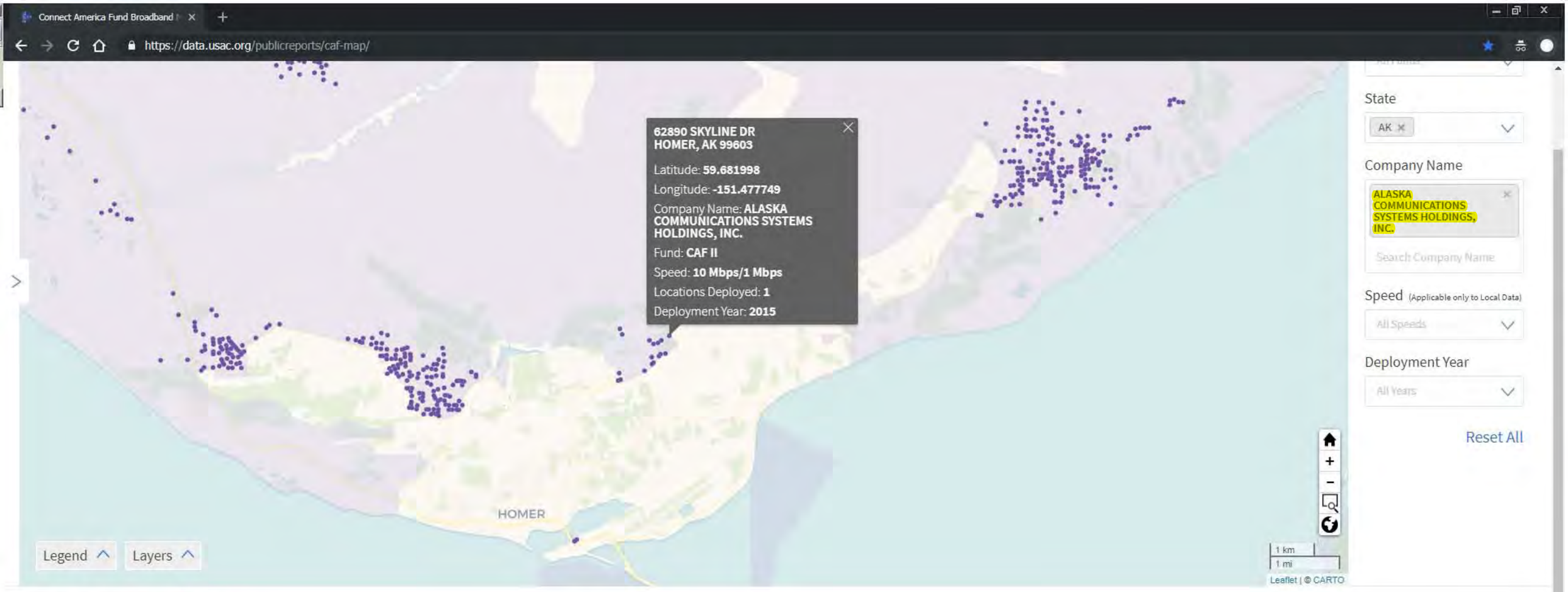
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State	Fund	Company Name	Deployment Year	Locations Obligation	Locations Deployed	Total Support Disbursed
AK	CAF II	ALASKA COMMUNICATIONS SYSTEMS HOLDINGS, INC.	2015	-	5,331	$0.00
AK	CAF II	ALASKA COMMUNICATIONS SYSTEMS HOLDINGS, INC.	2016	-	7,114	$4,930,905.00
AK	CAF II	ALASKA COMMUNICATIONS SYSTEMS HOLDINGS, INC.	2017	-	7,481	$24,625,113.00

Exhibit E
USAC CAF Maps



State Data | Local Data

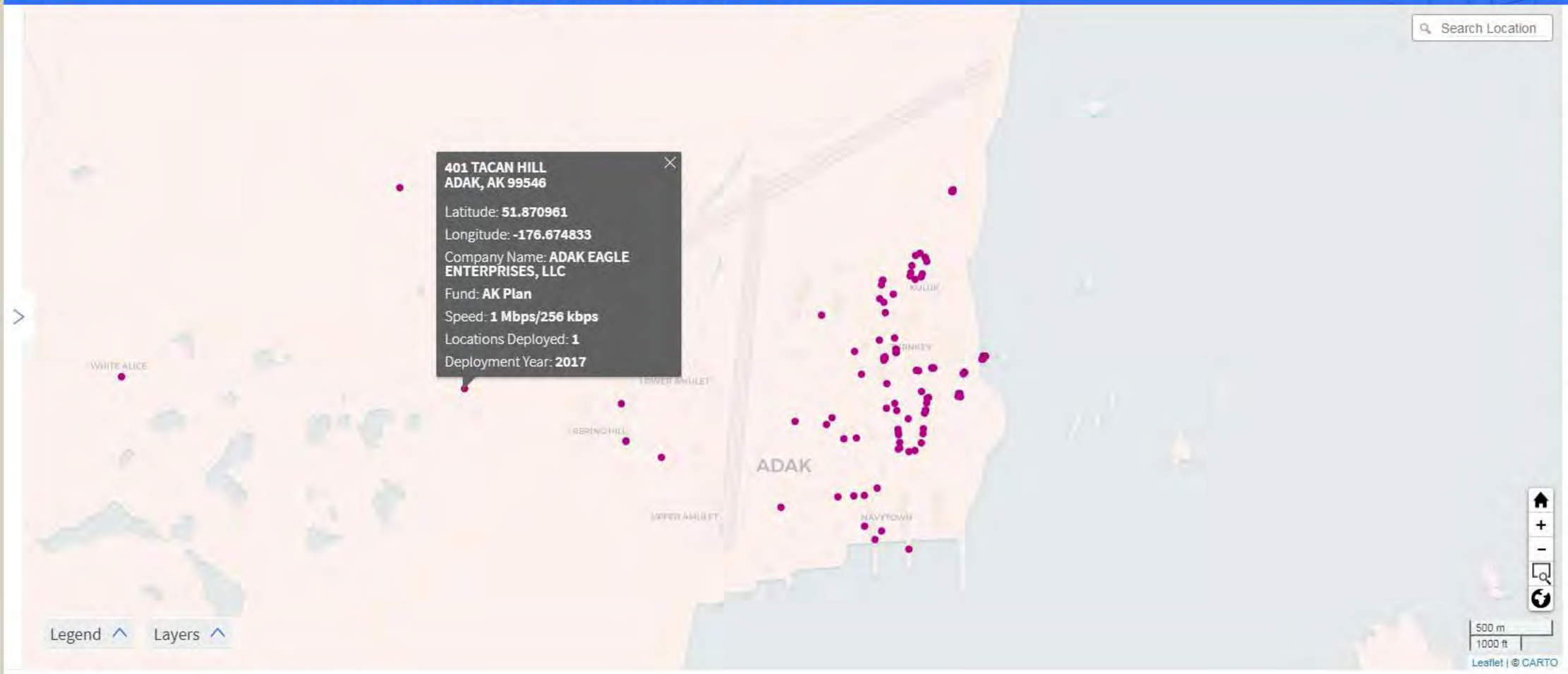
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AK	CAF II	ALASKA COMMUNICATIONS SYSTEMS HOLDINGS, INC.	2016	-	7,114	$4,930,905.00
AK	CAF II	ALASKA COMMUNICATIONS SYSTEMS HOLDINGS, INC.	2017	-	7,481	$24,625,113.00

Exhibit E
USAC CAF Maps

Connect America Fund Broadband Map



Fund: All Funds

State: AK

Company Name: ADAK EAGLE ENTERPRISES, LLC

Search Company Name

Speed (Applicable only to Local Data): All Speeds

Deployment Year: All Years

Reset All

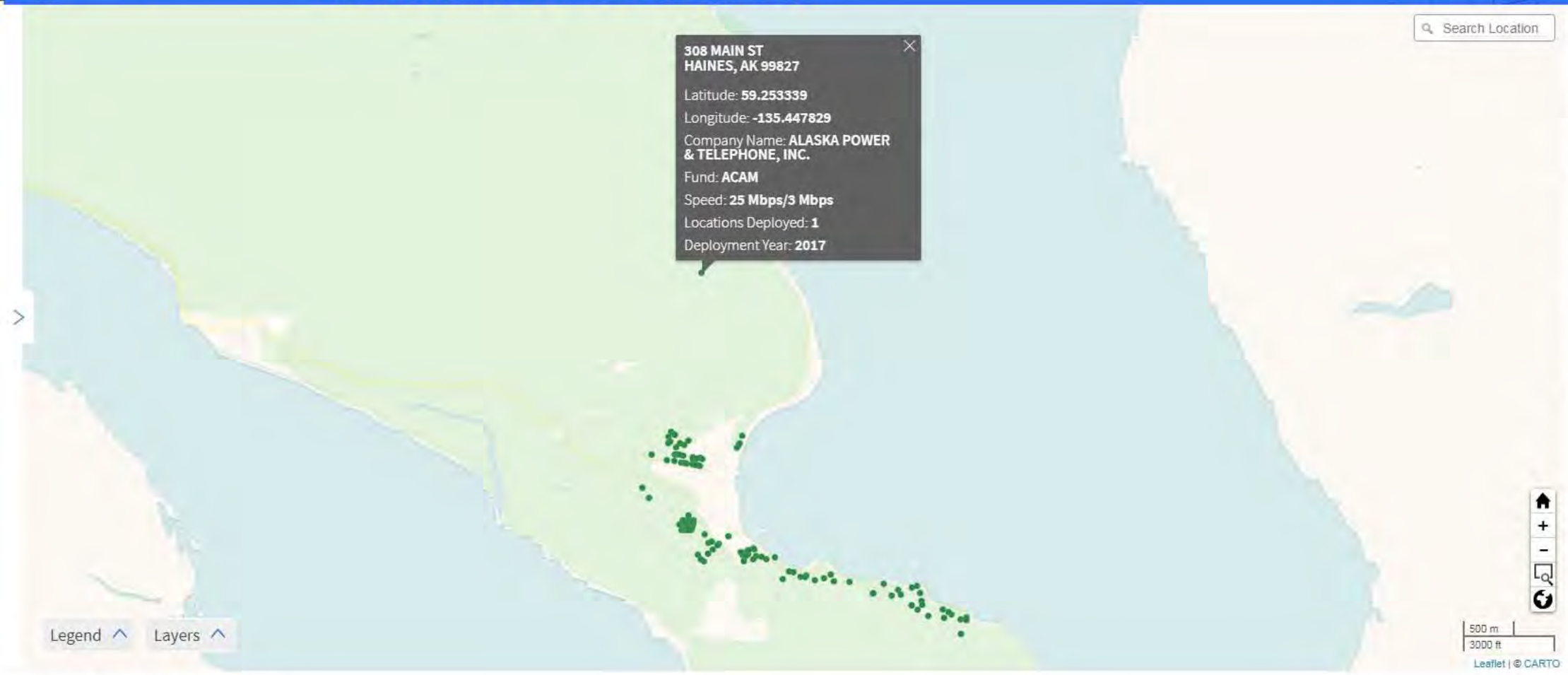
State Data | Local Data

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State	Fund	Company Name	Deployment Year	Locations Obligation	Locations Deployed	Total Support Disbursed
AK	AK Plan	ADAK EAGLE ENTERPRISES, LLC	2017	-	293	$333,000.00

Connect America Fund Broadband Map



Fund: All Funds

State: AK

Company Name: ALASKA POWER & TELEPHONE, INC.

Search Company Name

Speed (Applicable only to Local Data): All Speeds

Deployment Year: All Years

Reset All

State Data | Local Data

Filtered by: State | Company Name

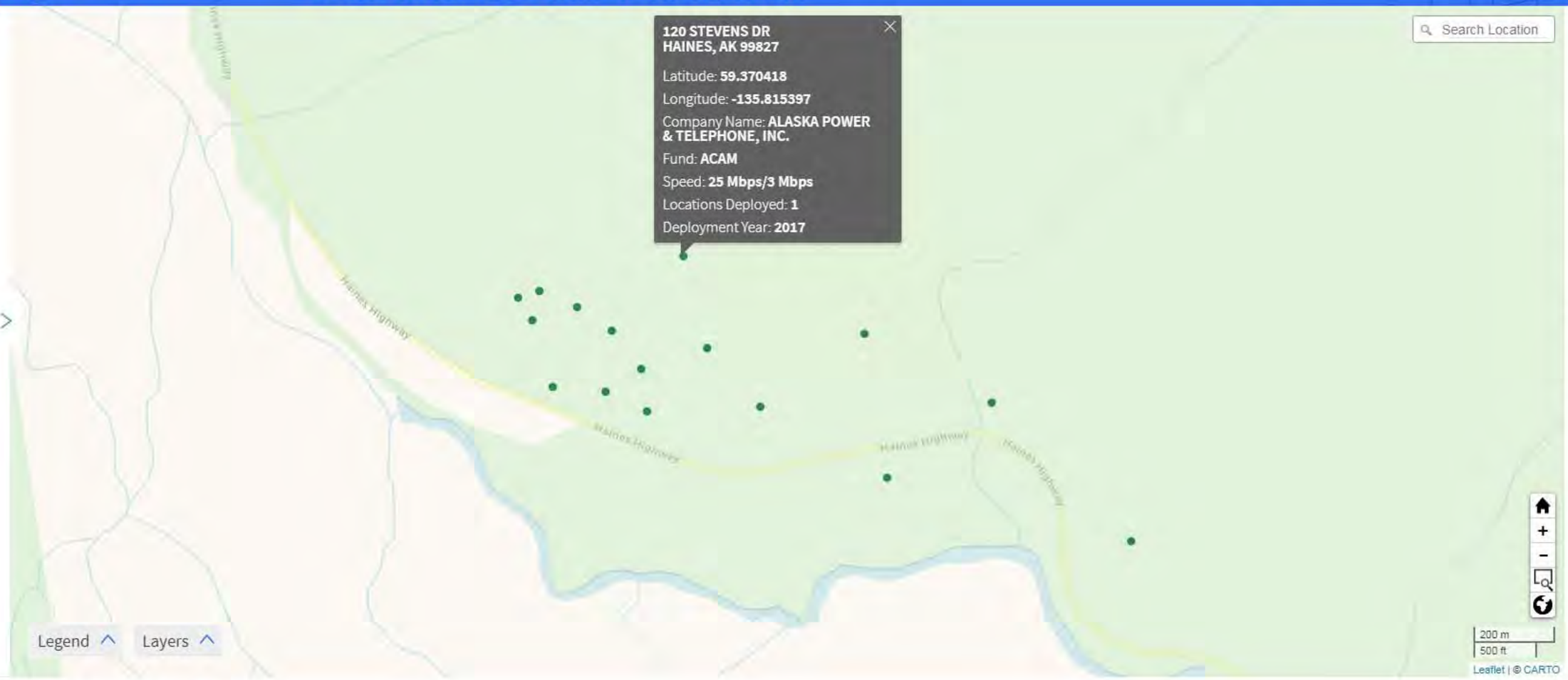
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State	Fund	Company Name	Deployment Year	Locations Obligation	Locations Deployed	Total Support Disbursed
AK	ACAM	ALASKA POWER & TELEPHONE, INC.	2017	-	248	$6,446,981.28

Connect America Fund Broadband

https://data.usac.org/publicreports/caf-map/

Connect America Fund Broadband Map



Fund: All Funds

State: AK

Company Name: ALASKA POWER & TELEPHONE, INC.

Search Company Name

Speed (Applicable only to Local Data): All Speeds

Deployment Year: All Years

Reset All

State Data | Local Data

Filtered by: State | Company Name

Displaying 1-1 of 1 records | Download Data

State	Fund	Company Name ▲	Deployment Year	Locations Obligation	Locations Deployed	Total Support Disbursed
AK	ACAM	ALASKA POWER & TELEPHONE, INC.	2017	-	248	$6,446,981.28

Exhibit E
USAC CAF Maps

Connect America Fund Broadband Map



Fund: All Funds

State: AK

Company Name: ARCTIC SLOPE TELEPHONE ASSOCIATION COOPERATIVE, INC.

Search Company Name

Speed (Applicable only to Local Data): All Speeds

Deployment Year: All Years

Reset All

State Data | Local Data

Filtered by: State | Company Name

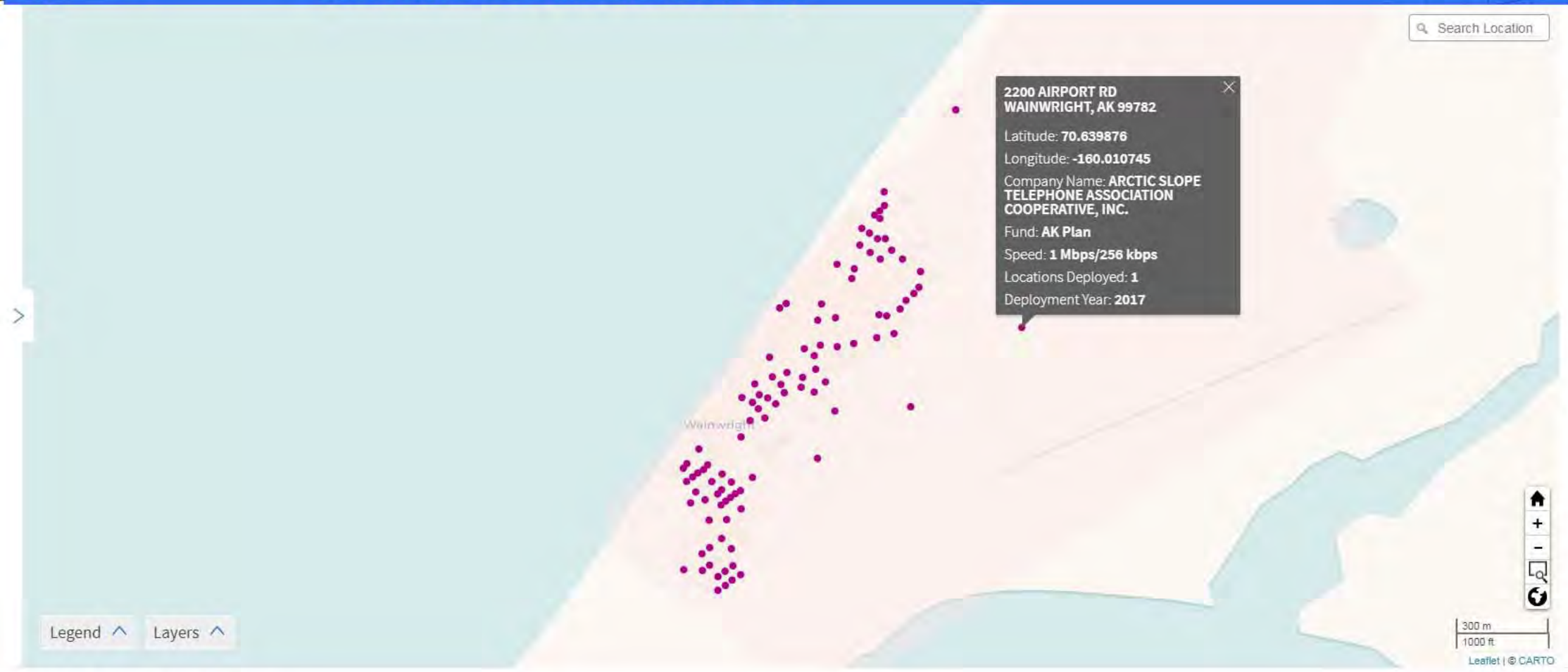
Displaying 1-1 of 1 records | Download Data

State	Fund	Company Name	Deployment Year	Locations Obligation	Locations Deployed	Total Support Disbursed
AK	AK Plan	ARCTIC SLOPE TELEPHONE ASSOCIATION COOPERATIVE, INC.	2017	-	202	$3,135,240.00

Connect America Fund Broadband

https://data.usac.org/publicreports/caf-map/

Connect America Fund Broadband Map



Fund

All Funds

State

AK

Company Name

ARCTIC SLOPE TELEPHONE ASSOCIATION COOPERATIVE, INC.

Search Company Name

Speed (Applicable only to Local Data)

All Speeds

Deployment Year

All Years

Reset All

State Data | Local Data

Filtered by: State | Company Name

Displaying 1-1 of 1 records | Download Data

State	Fund	Company Name	Deployment Year	Locations Obligation	Locations Deployed	Total Support Disbursed
AK	AK Plan	ARCTIC SLOPE TELEPHONE ASSOCIATION COOPERATIVE, INC.	2017	-	202	$3,135,240.00

Exhibit E
USAC CAF Maps

Connect America Fund Broadband

https://data.usac.org/publicreports/caf-map/

Connect America Fund Broadband Map



Fund: All Funds

State: AK

Company Name: BRISTOL BAY TELEPHONE COOPERATIVE

Search Company Name

Speed (Applicable only to Local Data): All Speeds

Deployment Year: All Years

Reset All

State Data | Local Data

Filtered by: State | Company Name

Displaying 1-1 of 1 records | Download Data

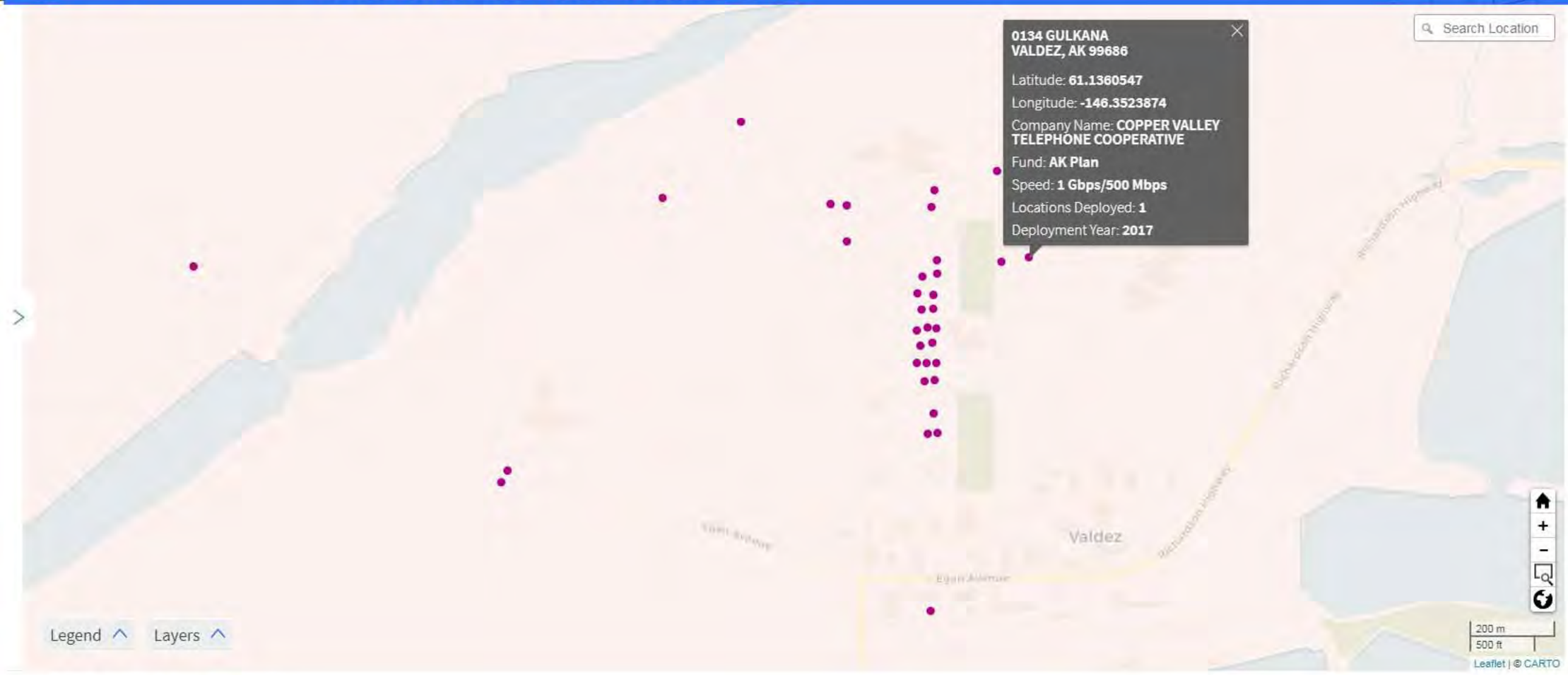
State	Fund	Company Name ▲	Deployment Year	Locations Obligation	Locations Deployed	Total Support Disbursed
AK	AK Plan	BRISTOL BAY TELEPHONE COOPERATIVE	2017	-	103	$1,136,604.00

Exhibit E
USAC CAF Maps

Connect America Fund Broadband

https://data.usac.org/publicreports/caf-map/

Connect America Fund Broadband Map



Fund: All Funds

State: AK

Company Name: COPPER VALLEY TELEPHONE COOPERATIVE

Search Company Name

Speed (Applicable only to Local Data): All Speeds

Deployment Year: All Years

Reset All

State Data | Local Data

Filtered by: State | Company Name

Displaying 1-1 of 1 records | Download Data

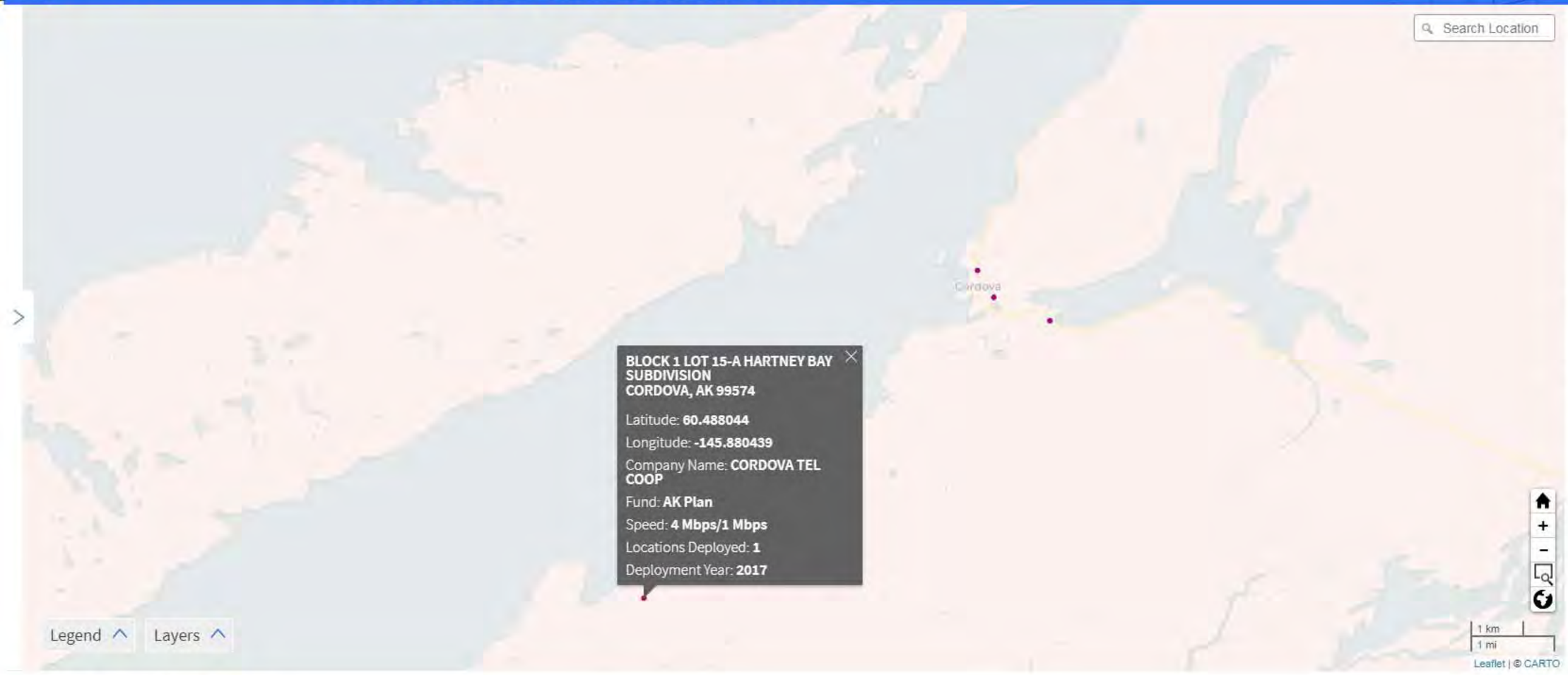
State	Fund	Company Name	Deployment Year	Locations Obligation	Locations Deployed	Total Support Disbursed
AK	AK Plan	COPPER VALLEY TELEPHONE COOPERATIVE	2017	-	44	$11,307,498.00

Exhibit E
USAC CAF Maps

Connect America Fund Broadband

https://data.usac.org/publicreports/caf-map/

Connect America Fund Broadband Map



Fund: All Funds

State: AK

Company Name: CORDOVA TEL COOP

Search Company Name

Speed (Applicable only to Local Data): All Speeds

Deployment Year: All Years

Reset All

State Data | Local Data

Filtered by: State | Company Name

Displaying 1-1 of 1 records | Download Data

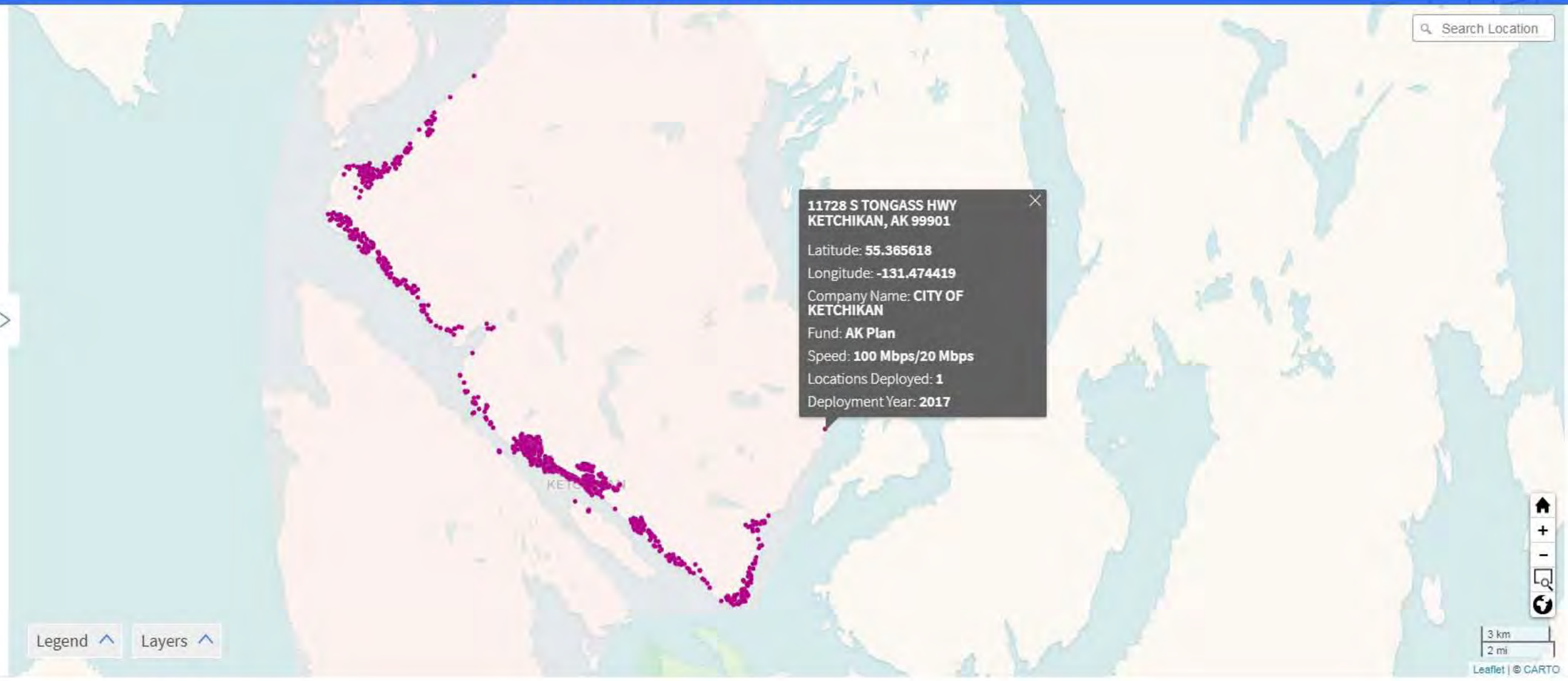
State	Fund	Company Name	Deployment Year	Locations Obligation	Locations Deployed	Total Support Disbursed
AK	AK Plan	CORDOVA TEL COOP	2017	-	4	$2,316,234.00

Exhibit E
USAC CAF Maps

Connect America Fund Broadband

https://data.usac.org/publicreports/caf-map/

Connect America Fund Broadband Map



Fund: All Funds

State: AK

Company Name: CITY OF KETCHIKAN

Search Company Name

Speed (Applicable only to Local Data): All Speeds

Deployment Year: All Years

Reset All

State Data | Local Data

Filtered by: State | Company Name

Displaying 1-1 of 1 records | Download Data

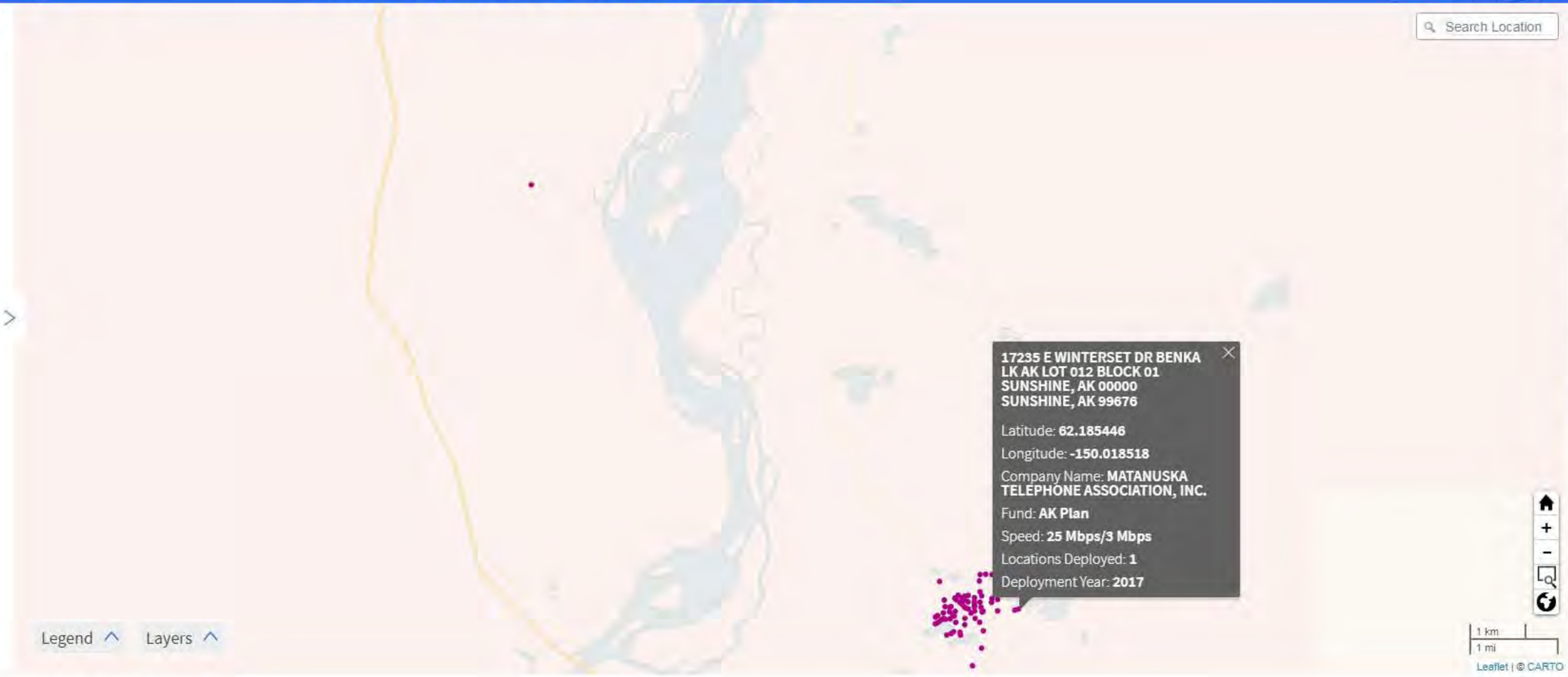
State	Fund	Company Name	Deployment Year	Locations Obligation	Locations Deployed	Total Support Disbursed
AK	AK Plan	CITY OF KETCHIKAN	2017	-	1,587	$4,217,490.00

Exhibit E
USAC CAF Maps

Connect America Fund Broadband

https://data.usac.org/publicreports/caf-map/

Connect America Fund Broadband Map



Fund: All Funds

State: AK

Company Name: MATANUSKA TELEPHONE ASSOCIATION, INC.

Search Company Name

Speed (Applicable only to Local Data): All Speeds

Deployment Year: All Years

Reset All

State Data | Local Data

Filtered by: State | Company Name

Displaying 1-1 of 1 records | Download Data

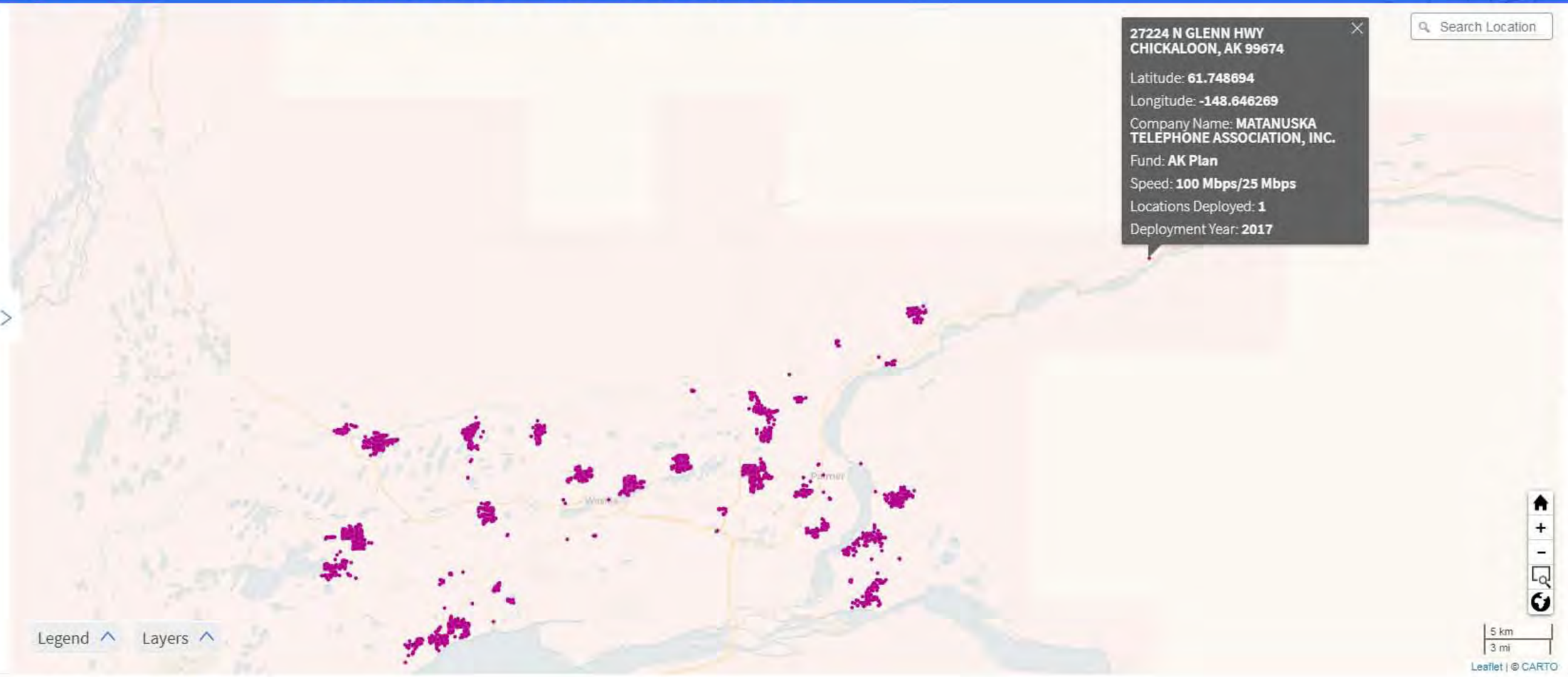
State	Fund	Company Name	Deployment Year	Locations Obligation	Locations Deployed	Total Support Disbursed
AK	AK Plan	MATANUSKA TELEPHONE ASSOCIATION, INC.	2017	-	5,370	$18,720,342.00

Exhibit E
USAC CAF Maps

Connect America Fund Broadband

https://data.usac.org/publicreports/caf-map/

Connect America Fund Broadband Map



Fund: All Funds

State: AK

Company Name: MATANUSKA TELEPHONE ASSOCIATION, INC.

Search Company Name

Speed (Applicable only to Local Data): All Speeds

Deployment Year: All Years

Reset All

State Data | Local Data

Filtered by: State | Company Name

Displaying 1-1 of 1 records | Download Data

State	Fund	Company Name	Deployment Year	Locations Obligation	Locations Deployed	Total Support Disbursed
AK	AK Plan	MATANUSKA TELEPHONE ASSOCIATION, INC.	2017	-	5,370	$18,720,342.00

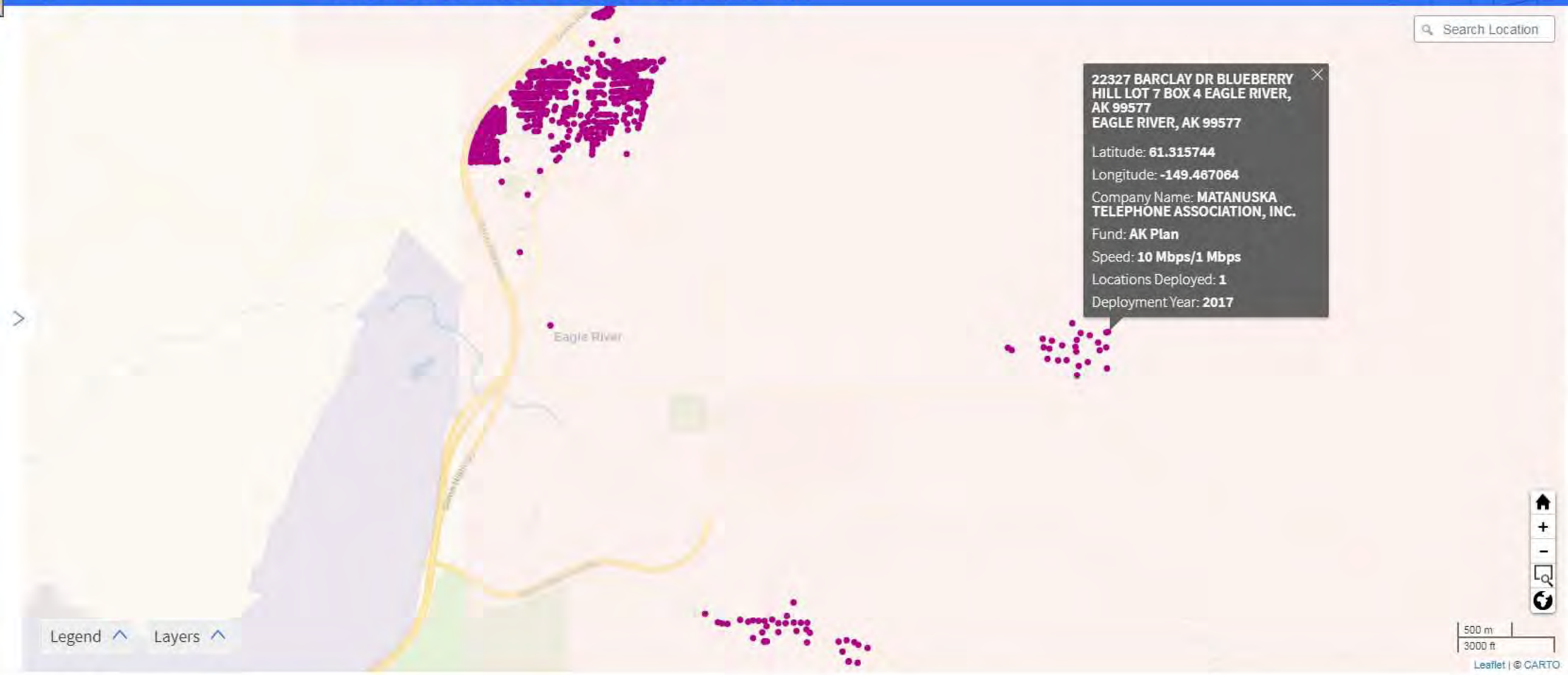
Exhibit E
USAC CAF Maps

Connect America Fund Broadband

https://data.usac.org/publicreports/caf-map/

Connect America Fund Broadband Map

Universal Service Administrative Co.



Fund

All Funds

State

AK

Company Name

MATANUSKA TELEPHONE ASSOCIATION, INC.

Search Company Name

Speed (Applicable only to Local Data)

All Speeds

Deployment Year

All Years

Reset All

State Data | Local Data

Filtered by: State | Company Name

Displaying 1-1 of 1 records | Download Data

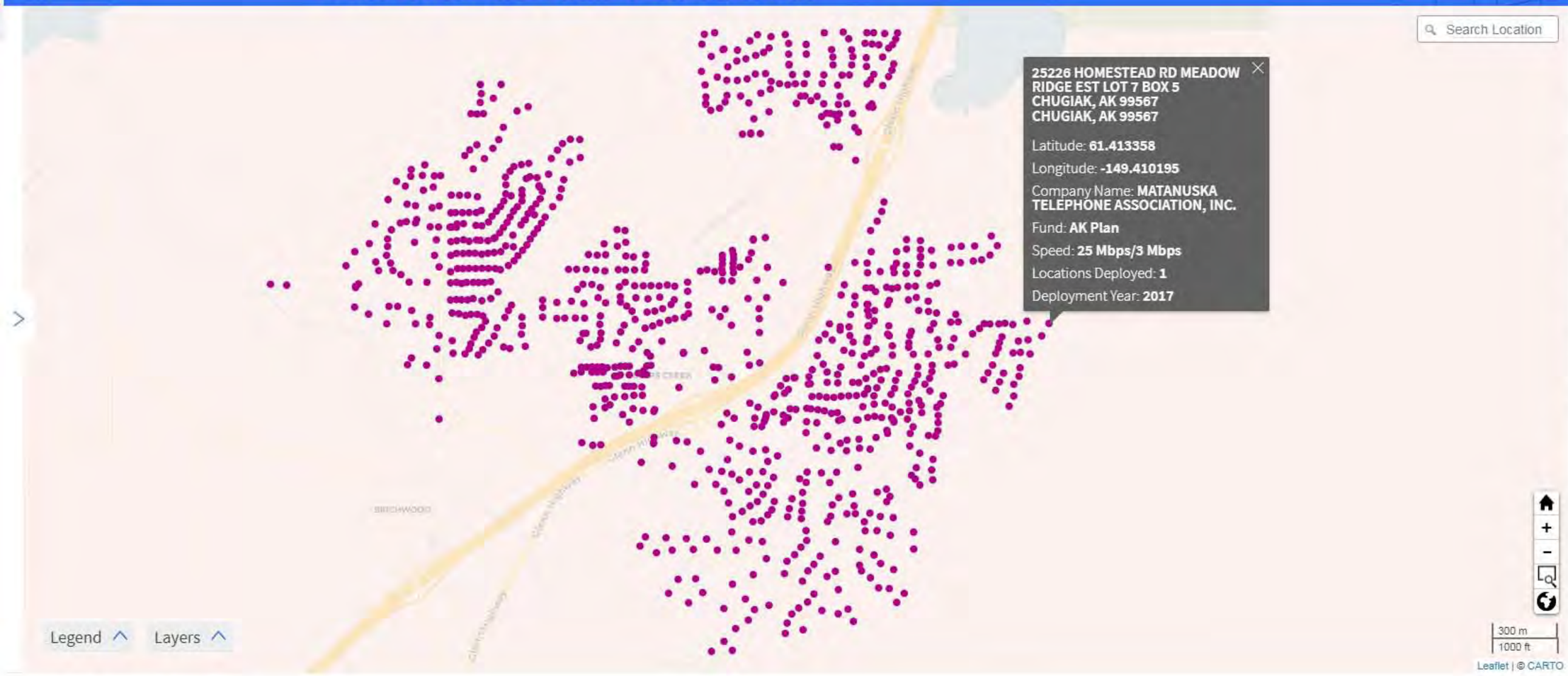
State	Fund	Company Name	Deployment Year	Locations Obligation	Locations Deployed	Total Support Disbursed
AK	AK Plan	MATANUSKA TELEPHONE ASSOCIATION, INC.	2017	-	5,370	$18,720,342.00

Exhibit E
USAC CAF Maps

Connect America Fund Broadband

https://data.usac.org/publicreports/caf-map/

Connect America Fund Broadband Map



Fund: All Funds

State: AK

Company Name: MATANUSKA TELEPHONE ASSOCIATION, INC.

Search Company Name

Speed (Applicable only to Local Data): All Speeds

Deployment Year: All Years

Reset All

State Data | Local Data

Filtered by: State | Company Name

Displaying 1-1 of 1 records | Download Data

State	Fund	Company Name	Deployment Year	Locations Obligation	Locations Deployed	Total Support Disbursed
AK	AK Plan	MATANUSKA TELEPHONE ASSOCIATION, INC.	2017	-	5,370	$18,720,342.00

Exhibit E
USAC CAF Maps

Connect America Fund Broadband

https://data.usac.org/publicreports/caf-map/

Connect America Fund Broadband Map



Search Location

Fund

All Funds

State

AK

Company Name

AMERICAN BROADBAND COMMUNICATIONS ET AL.

Search Company Name

Speed (Applicable only to Local Data)

All Speeds

Deployment Year

All Years

Reset All

State Data | Local Data

Filtered by: State | Company Name

Displaying 1-1 of 1 records | Download Data

State	Fund	Company Name	Deployment Year	Locations Obligation	Locations Deployed	Total Support Disbursed
AK	AK Plan	AMERICAN BROADBAND COMMUNICATIONS ET AL.	2017	-	2,369	$5,391,870.00

Exhibit E
USAC CAF Maps

Exhibit F

Alaska Communications Fixed Wireless Deployment Maps for North Pole, Ninilchik, Sterling/Funny River, and Kalifornsky

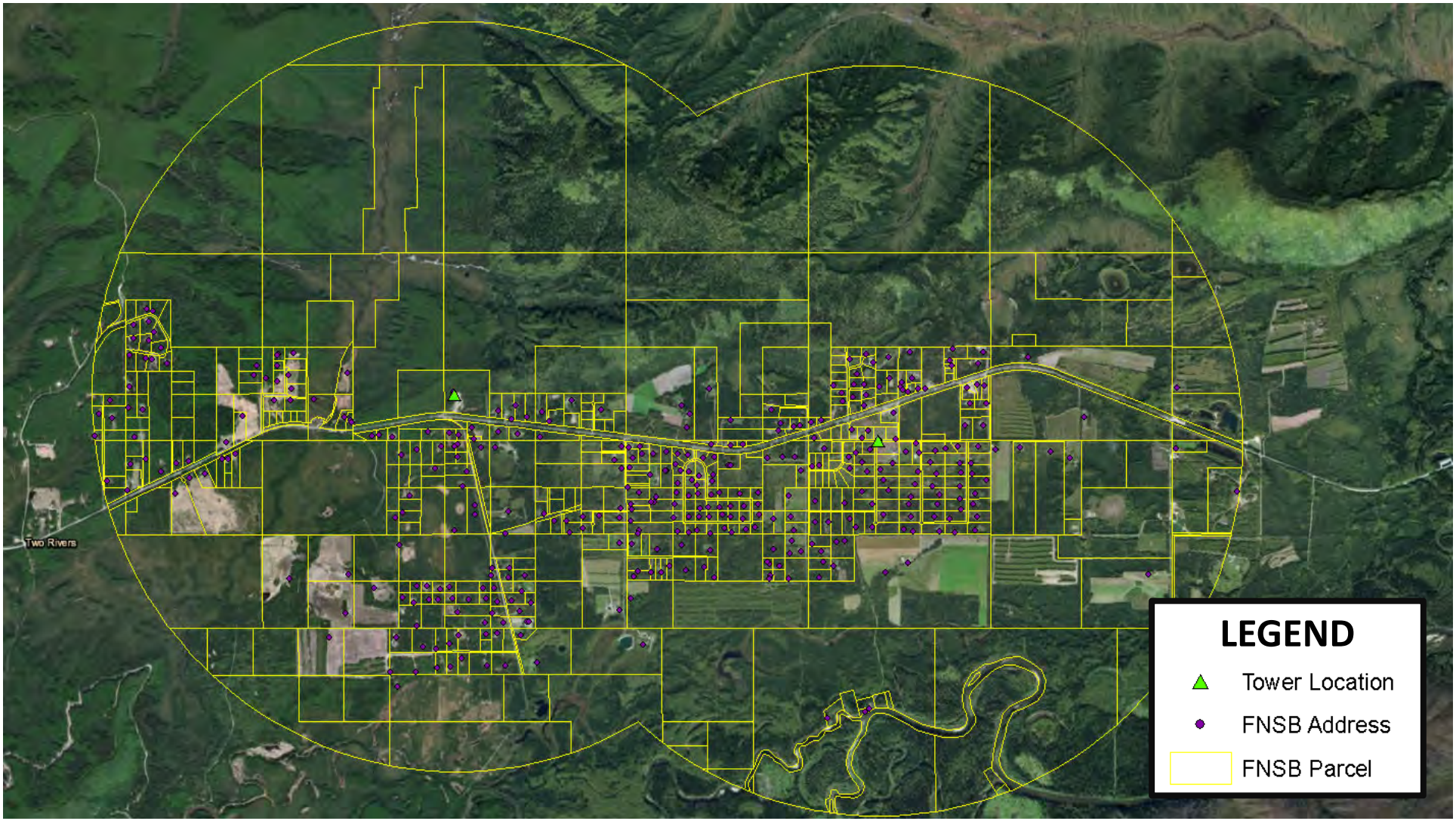
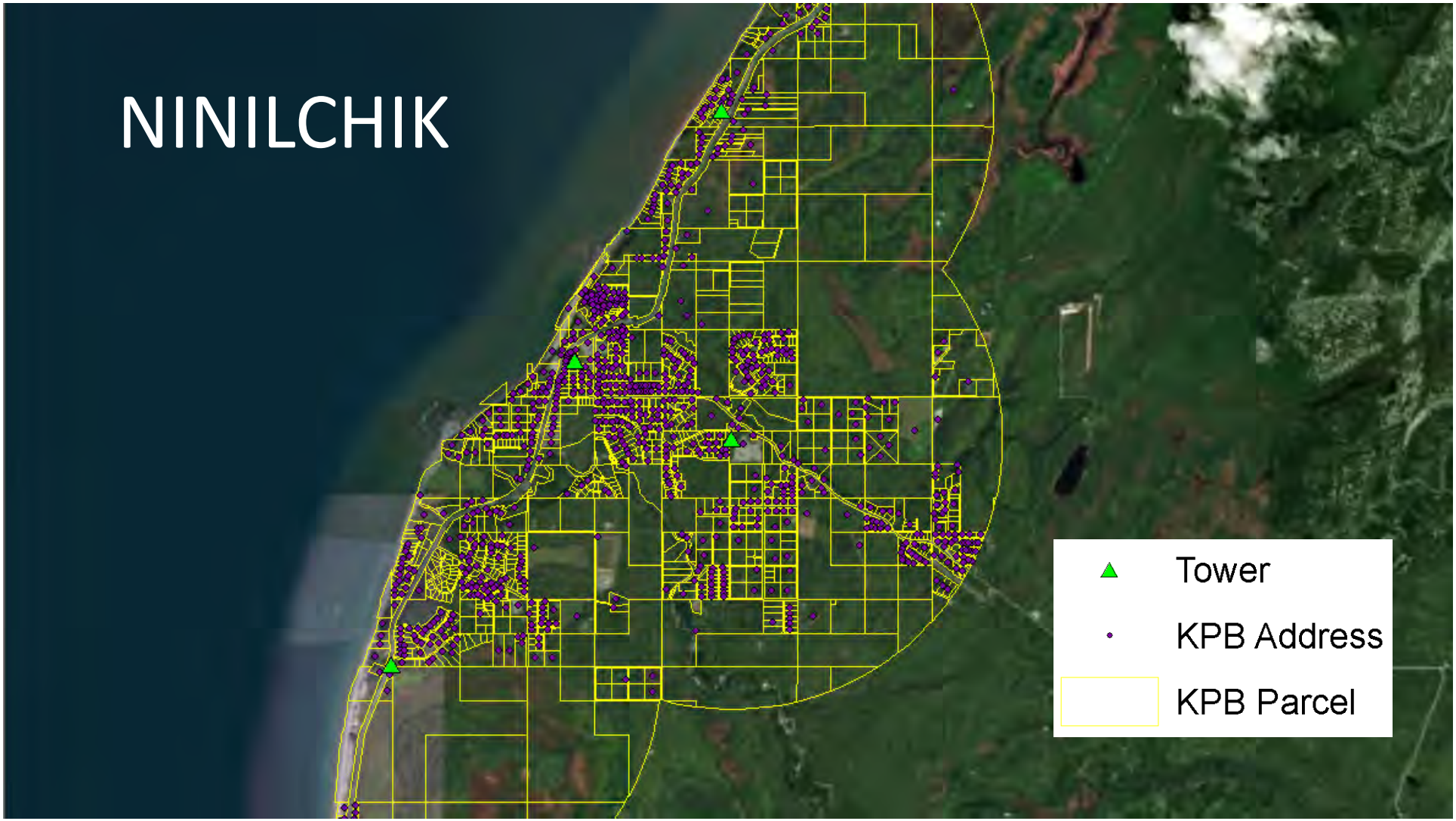
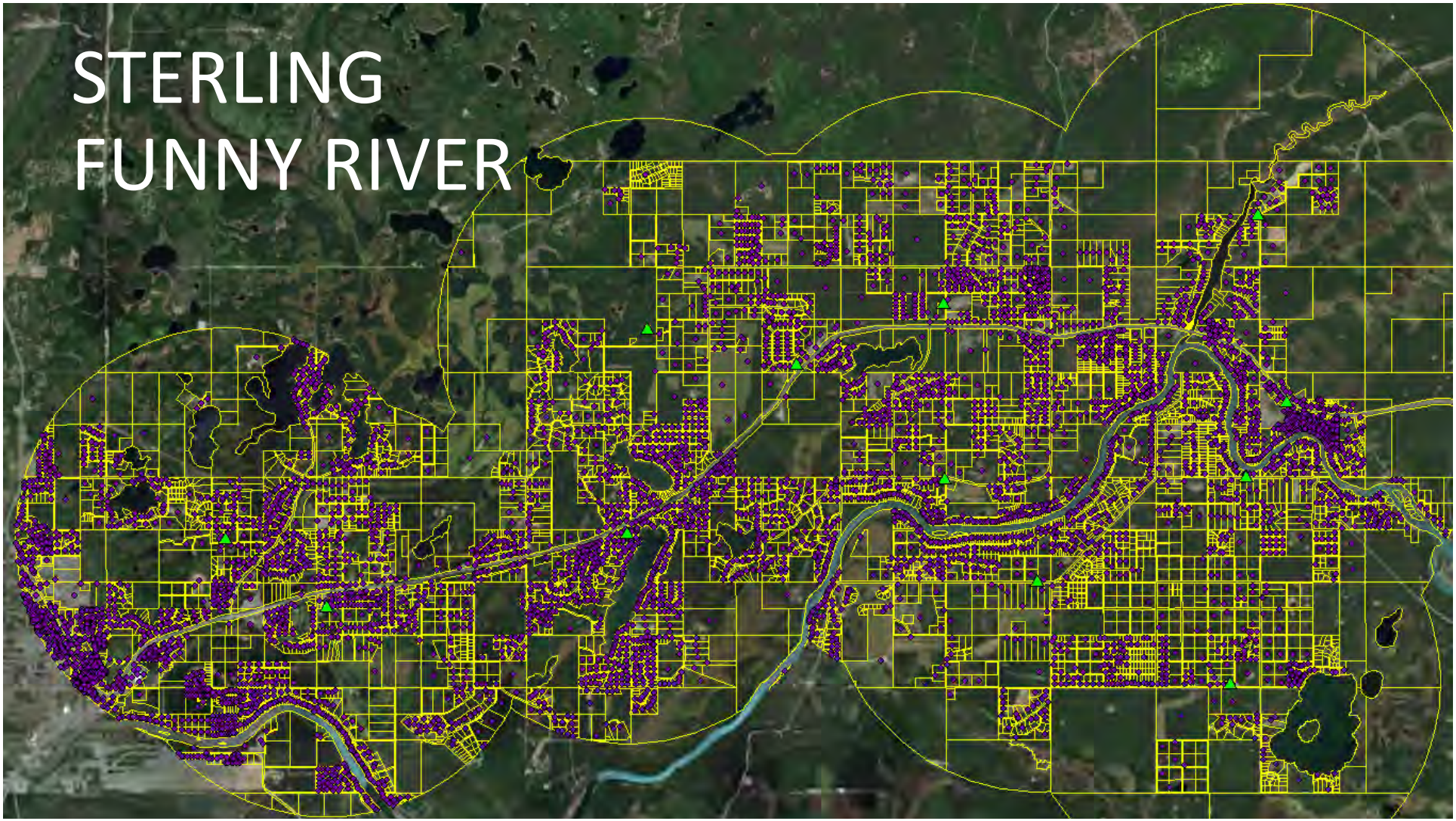


Exhibit F
Alaska Communications Wireless Deployment


NINILCHIK
Tower
KPB Address
KPB Parcel


STERLING
FUNNY RIVER

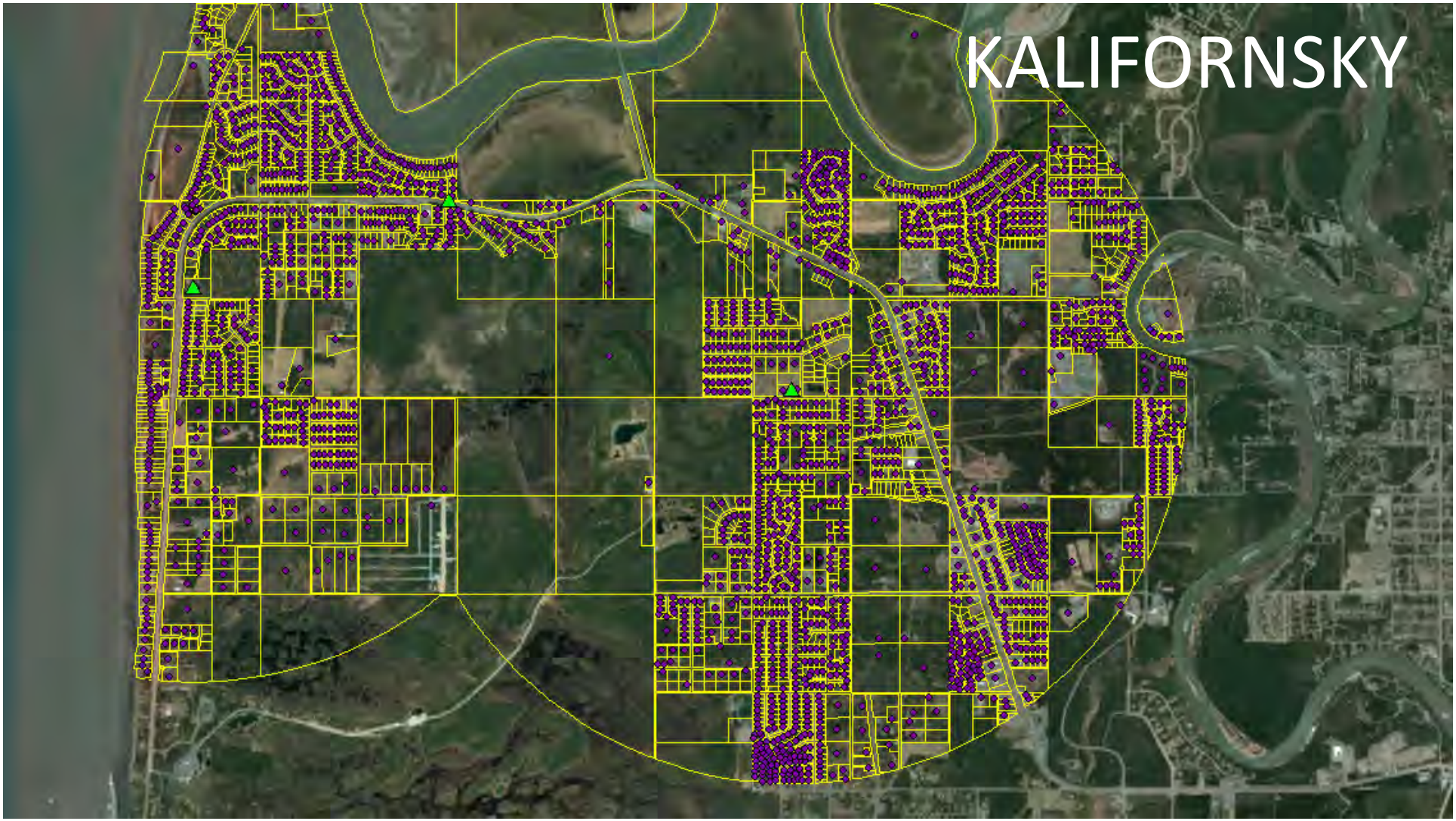

KALIFORNSKY

Exhibit G

GCI Middle Mile Map

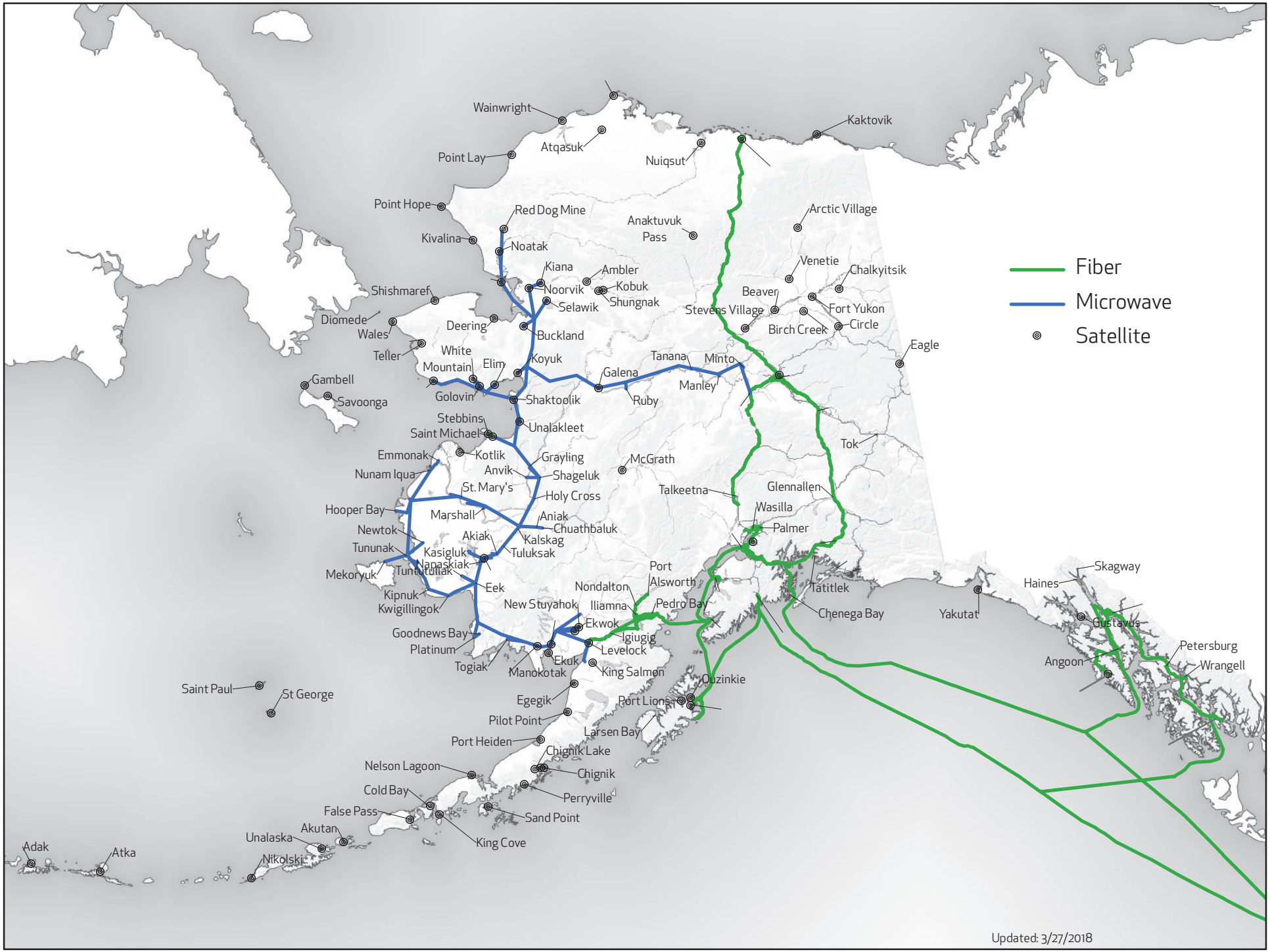


Exhibit G
GCI Middle Mile Map

Exhibit H

AT&T Middle Mile Map

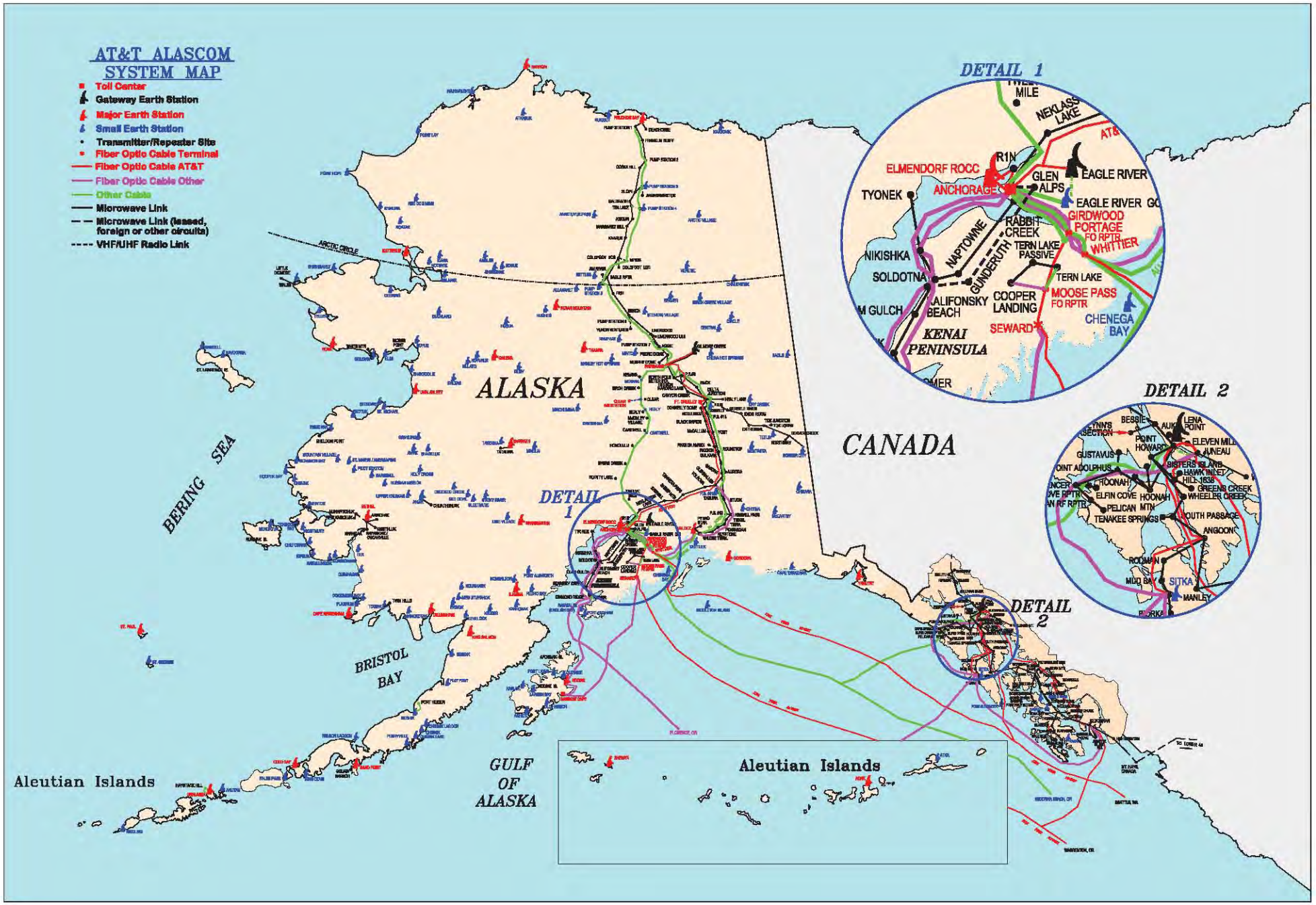


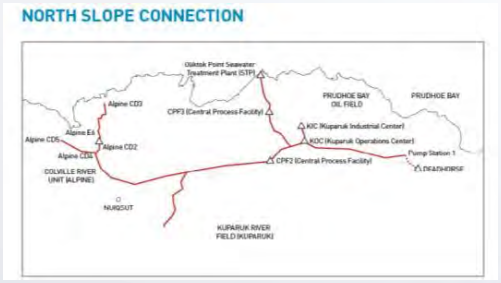
Exhibit H
AT&T Middle Mile Map

Exhibit I

Alaska Communications Network Map

Alaska Communications – Who We Are

- Extensive Long Haul Fiber Network
- High Quality Fiber & Broadband Network
- State of Art Secure IP Network
- Recent investments in Fixed Wireless Access and Satellite ★



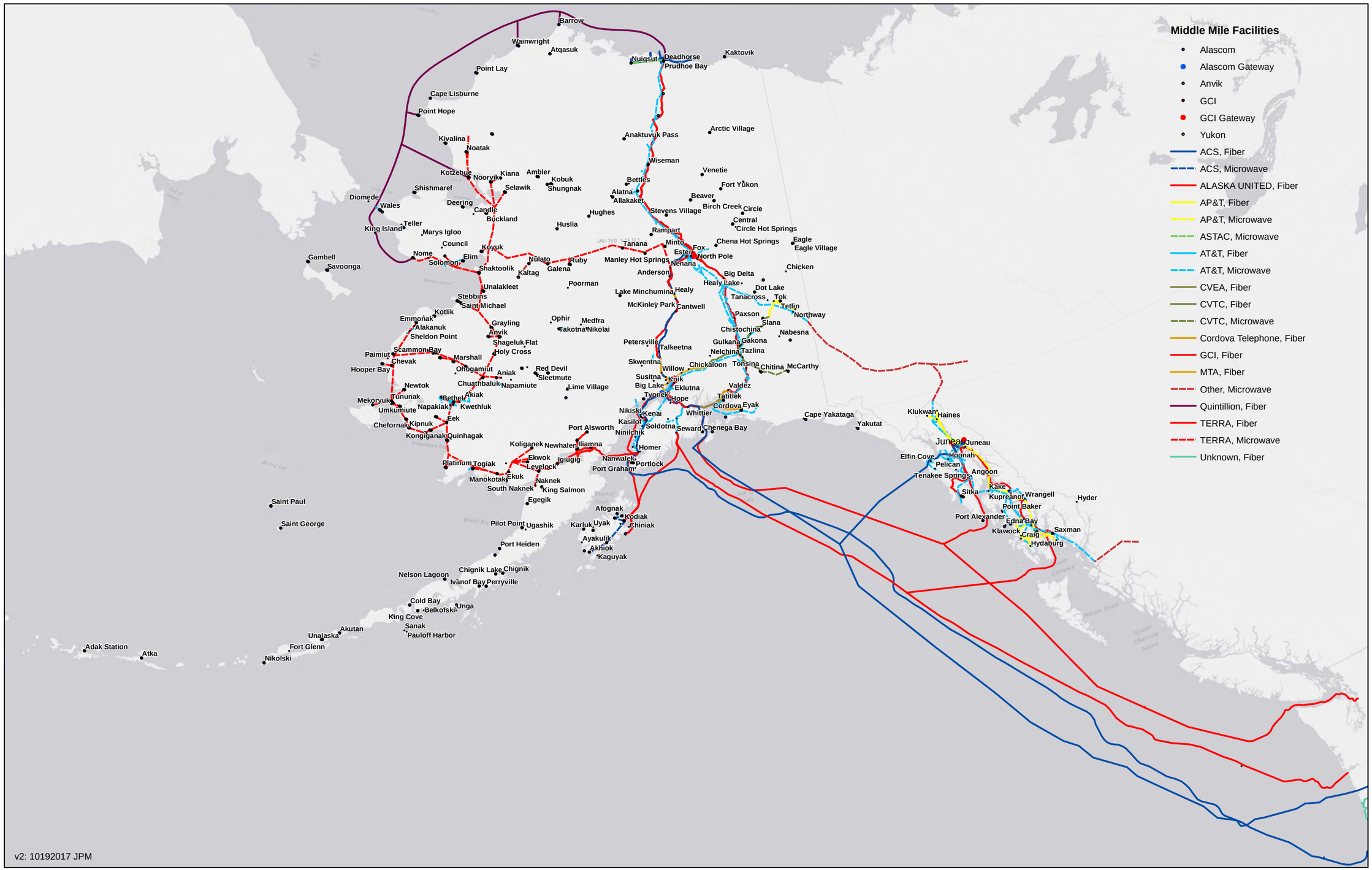


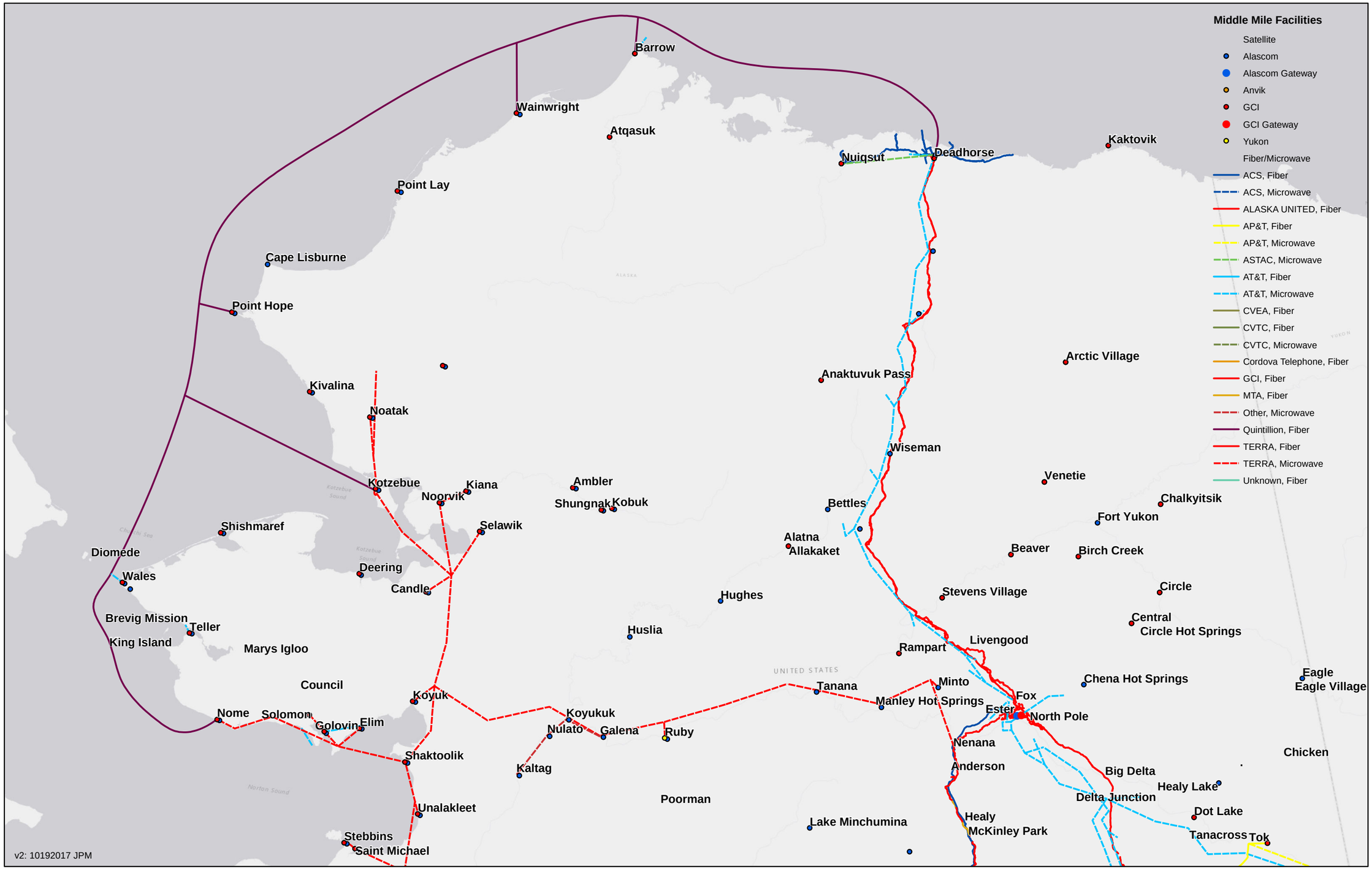
alaska COMMUNICATIONS.

Exhibit I
Alaska Communications Network Map

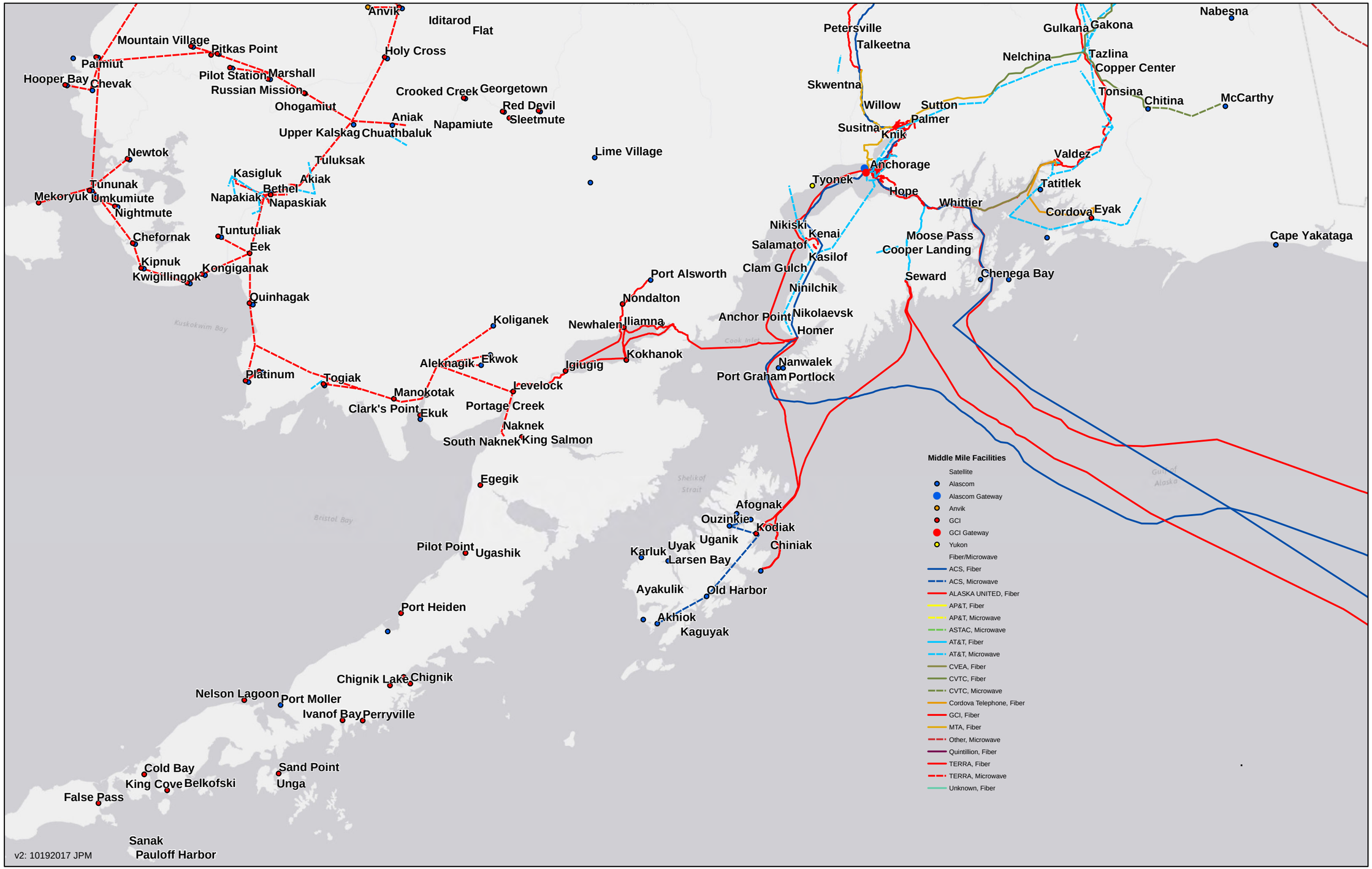
Exhibit J

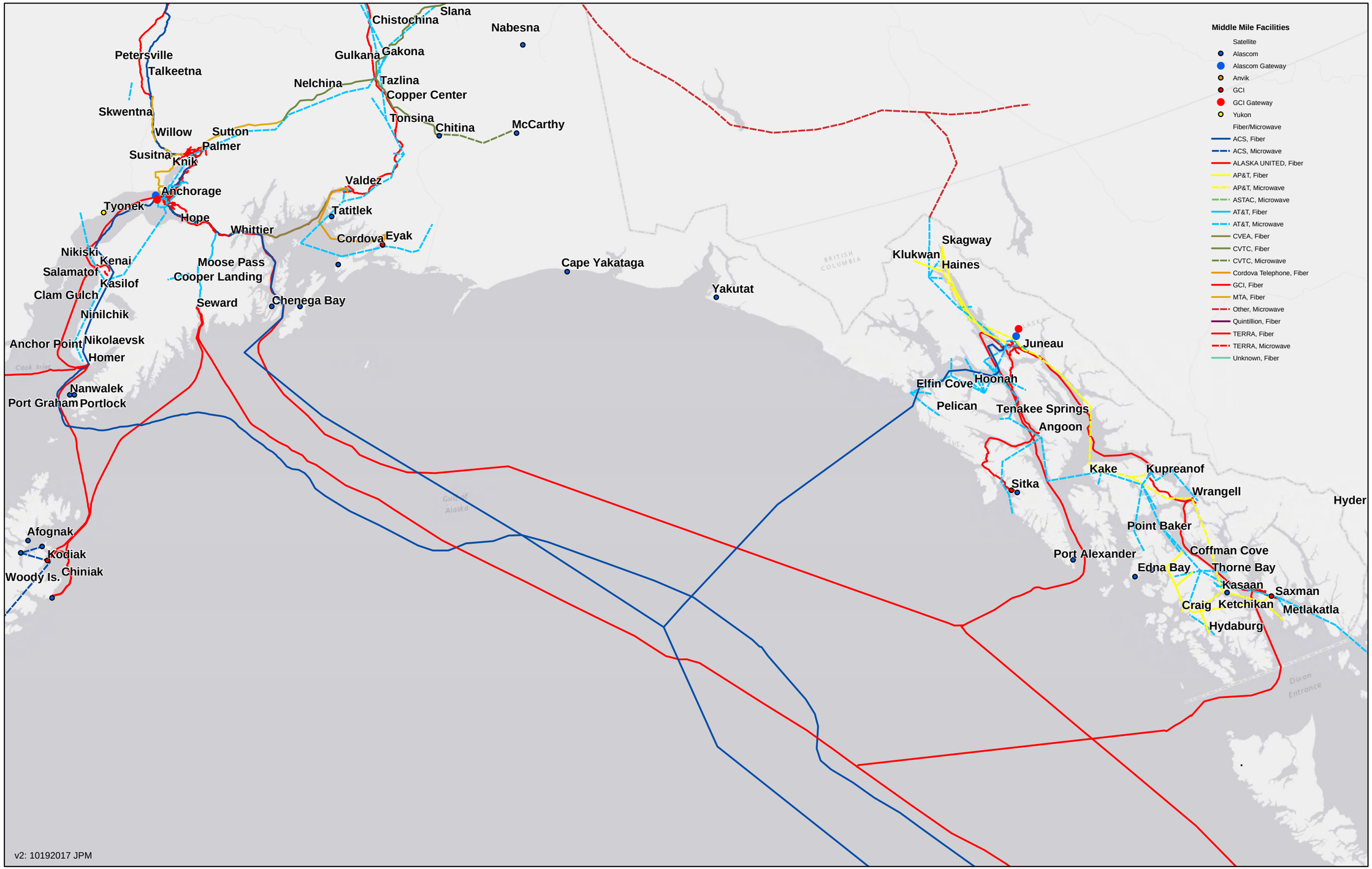
Alaska Middle Mile Maps from the Commission's 2017 Legislative Broadband Report

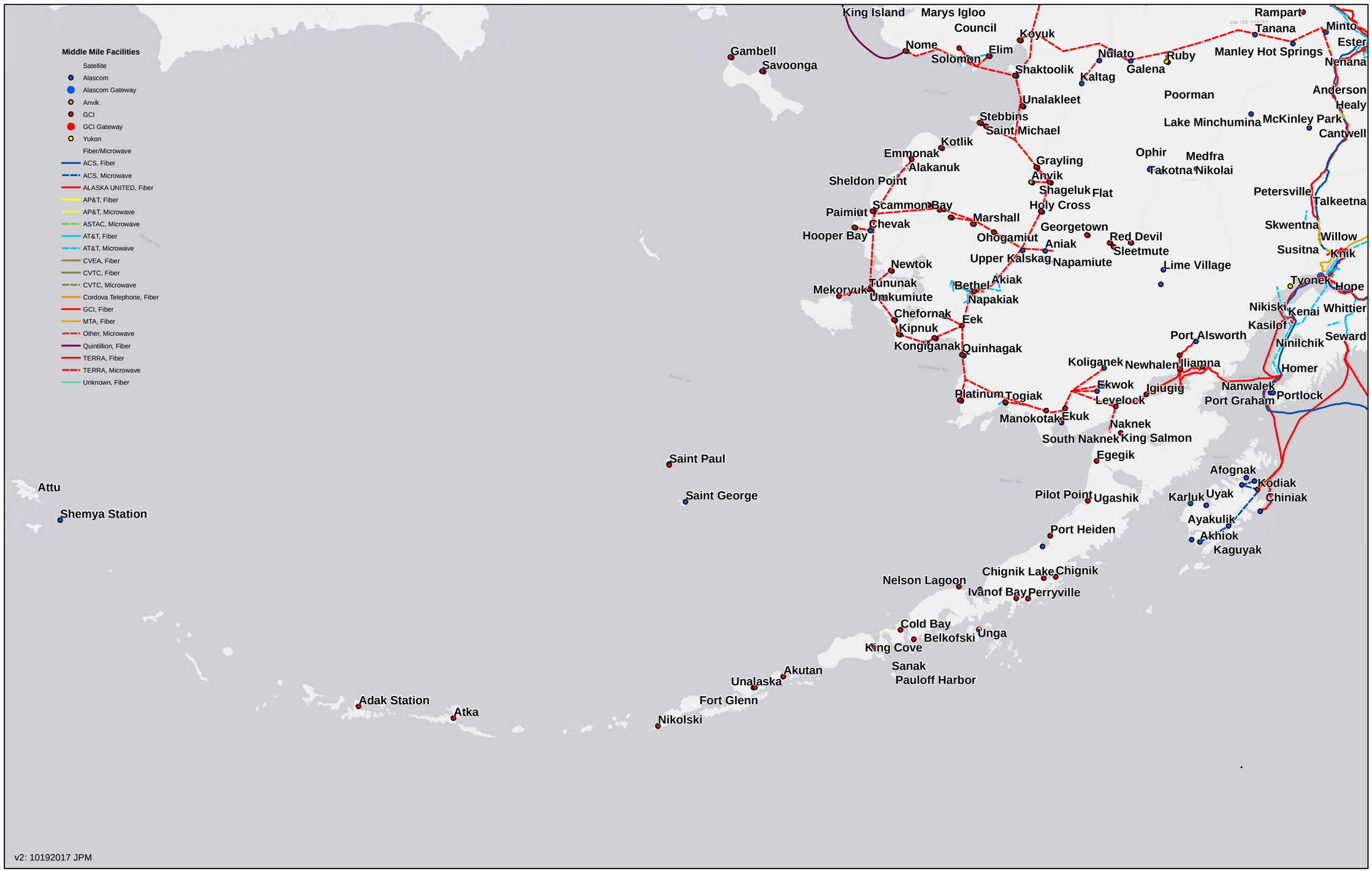

Middle Mile Facilities
Alascom
Alascom Gateway
Anvik
GCI
GCI Gateway
Yukon
ACS, Fiber
ACS, Microwave
ALASKA UNITED, Fiber
AP&T, Fiber
AP&T, Microwave
ASTAC, Microwave
AT&T, Fiber
AT&T, Microwave
CVEA, Fiber
CVTC, Fiber
CVTC, Microwave
Cordova Telephone, Fiber
GCI, Fiber
MTA, Fiber
Other, Microwave
Quintillion, Fiber
TERRA, Fiber
TERRA, Microwave
Unknown, Fiber
Barrow
Wainwright
Atqasuk
Nuiqsut
Deadhorse
Prudhoe Bay
Kaktovik
Point Lay
Cape Lisburne
Point Hope
Kivalina
Noatak
Anaktuvuk Pass
Arctic Village
Wiseman
Venetie
Kotzebue
Noorvik
Kiana
Ambler
Kobuk
Shungnak
Bettles
Fort Yukon
Shishmaref
Selawik
Alatna
Allakaket
Beaver
Diomede
Wales
Deering
Candle
Buckland
Hughes
Stevens Village
Birch Creek
Circle
Central
Circle Hot Springs
King Island
Teller
Marys Igloo
Huslia
Rampart
Chena Hot Springs
Eagle
Eagle Village
Council
Koyuk
Tanana
Minto
Fox
Gambell
Savoonga
Nome
Solomon
Elim
Nulato
Ruby
Galena
Manley Hot Springs
Esters
North Pole
Nenana
Chicken
Shaktoolik
Kaltag
Anderson
Big Delta
Unalakleet
Poorman
Healy Lake
Dot Lake
Stebbins
Saint Michael
Lake Minchumina
Healy
Tanacross
Tok
Tetlin
Kotlik
McKinley Park
Cantwell
Paxson
Northway
Emmonak
Alakanuk
Grayling
Ophir
Medfra
Takotna
Nikolai
Anvik
Sheldon Point
Slana
Chistochina
Nabesna
Shageluk
Flat
Petersville
Talkeetna
Gulkana
Sakona
Holy Cross
Nelchina
Tazlina
Scammon Bay
Paimiut
Marshall
Skwentna
Willow
Chickaloon
Tonsina
Chitina
McCarthy
Chevak
Hooper Bay
Ohogamiut
Aniak
Red Devil
Sleetmute
Susitna
Knik
Big Lake
Eklutna
Valdez
Chuathbaluk
Napamiute
Lime Village
Newtok
Tununak
Akiak
Bethel
Tyonek
Hope
Tatitlek
Mekoryuk
Kwethluk
Nikiski
Kenai
Cordova
Eyak
Umkumiute
Napakiak
Whittier
Cape Yakataga
Klukwan
Haines
Eek
Kasilof
Soldotna
Yakutat
Chefornak
Kipnuk
Port Alsworth
Seward
Chenega Bay
Juneau
Kongiganak
Quinhagak
Niniltchik
Homer
Elfin Cove
Hoonah
Koliganek
Newhalen
Iliamna
Pelican
Angoon
Ekwok
Iguigig
Nanwalek
Portlock
Tenakee Springs
Platinum
Togiak
Levelock
Port Graham
Kake
Sitka
Wrangell
Manokotak
Ekuk
Naknek
Kupreanof
Hyder
South Naknek
King Salmon
Point Baker
Egegik
Port Alexander
Afognak
Kodiak
Edna Bay
Saint Paul
Pilot Point
Ugashik
Karluk
Uyak
Chiniak
Klawock
Craig
Saxman
Saint George
Ayakulik
Hydaburg
Port Heiden
Akhiok
Kaguyak
Nelson Lagoon
Chignik Lake
Chignik
Ivanof Bay
Perryville
Cold Bay
Belkofski
Unga
King Cove
Sanak
Akutan
Unalaska
Pauloff Harbor
Adak Station
Atka
Fort Glenn
Nikolski
v2: 10192017 JPM


Middle Mile Facilities
Satellite
Alascom
Alascom Gateway
Anvik
GCI
GCI Gateway
Yukon
Fiber/Microwave
ACS, Fiber
ACS, Microwave
ALASKA UNITED, Fiber
AP&T, Fiber
AP&T, Microwave
ASTAC, Microwave
AT&T, Fiber
AT&T, Microwave
CVEA, Fiber
CVTC, Fiber
CVTC, Microwave
Cordova Telephone, Fiber
GCI, Fiber
MTA, Fiber
Other, Microwave
Quintillion, Fiber
TERRA, Fiber
TERRA, Microwave
Unknown, Fiber
Barrow
Wainwright
Atqasuk
Point Lay
Cape Lisburne
Point Hope
Kivalina
Noatak
Kotzebue
Kiana
Noorvik
Ambler
Shungnak
Kobuk
Selawik
Shishmaref
Diomede
Wales
Deering
Candle
Brevig Mission
Teller
King Island
Marys Igloo
Council
Nome
Solomon
Golovin
Elim
Koyuk
Koyukuk
Nulato
Galena
Ruby
Shaktoolik
Kaltag
Unalakleet
Stebbins
Saint Michael
Poorman
Huslia
Hughes
Alatna
Allakaket
Bettles
Nuiqsut
Deadhorse
Kaktovik
Wiseman
Anaktuvuk Pass
Arctic Village
Venetie
Chalkyitsik
Fort Yukon
Beaver
Birch Creek
Stevens Village
Circle
Central
Circle Hot Springs
Livengood
Rampart
Tanana
Manley Hot Springs
Minto
Fox
Ester
North Pole
Chena Hot Springs
Eagle
Eagle Village
Nenana
Anderson
Big Delta
Healy Lake
Delta Junction
Dot Lake
Tanacross
Tok
Chicken
Healy
McKinley Park
Lake Minchumina
UNITED STATES
ALASKA
YUKON
Kotzebue Sound
Chukchi Sea
Norton Sound
v2: 10192017 JPM


Diomede
Wales
Deering
Candle
Brevig Mission
Teller
King Island
Marys Igloo
Council
Koyuk
Nome
Solomon
Golovin
Elim
Koyukuk
Nulato
Galena
Ruby
Shaktoolik
Kaltag
Unalakleet
Stebbins
Saint Michael
Bill Moores
Kotlik
Emmonak
Alakanuk
Sheldon Point
Grayling
Anvik
Shageluk
Iditarod
Flat
Holy Cross
Mountain Village
Pitkas Point
Paimiut
Hooper Bay
Chevak
Pilot Station
Marshall
Russian Mission
Ohogamiut
Crooked Creek
Georgetown
Red Devil
Sleetmute
Aniak
Napamiute
Upper Kalskag
Chuathbaluk
Newtok
Tuluksak
Kasigluk
Akiak
Bethel
Napakiak
Napaskiak
Tununak
Umkumiute
Nightmute
Mekoryuk
Chefornak
Tuntutuliak
Eek
Kipnuk
Kongiganak
Kwigillingok
Quinhagak
Platinum
Togiak
Manokotak
Clark's Point
Ekuk
Koliganek
Aleknagik
Ekwok
Igiugig
Levelock
Portage Creek
Naknek
South Naknek
King Salmon
Lime Village
Huslia
Hughes
Alatna
Poorman
Ophir
Takotna
McGrath
Medfra
Nikolai
ALASKA
UNITED STATES
Beaver
Birch Creek
Stevens Village
Circle
Central
Circle Hot Springs
Livengood
Rampart
Tanana
Minto
Manley Hot Springs
Fox
Ester
North Pole
Chena Hot Springs
Eagle
Eagle Village
Nenana
Anderson
Chicken
Big Delta
Healy Lake
Delta Junction
Dot Lake
Tanacross
Tok
Northway
Healy
McKinley Park
Cantwell
Lake Minchumina
Paxson
Mentasta Lake
Slana
Chistochina
Nabesna
Gulkana
Gakona
Petersville
Talkeetna
Nelchina
Tazlina
Copper Center
Skwentna
Tonsina
Chitina
McCarthy
Willow
Sutton
Palmer
Susitna
Knik
Anchorage
Valdez
Tatitlek
Cordova
Eyak
Tyonek
Hope
Whittier
Nikiski
Kenai
Salamatof
Kasilof
Moose Pass
Cooper Landing
Seward
Chenega Bay
Cape Yakataga
Clam Gulch
Ninilchik
Anchor Point
Nikolaevsk
Homer
Port Alsworth
Nondalton
Iliamna
Newhalen
Kokhanok
Nanwalek
Port Graham
Portlock
Middle Mile Facilities
Satellite
Alascom
Alascom Gateway
Anvik
GCI
GCI Gateway
Yukon
Fiber/Microwave
ACS, Fiber
ACS, Microwave
ALASKA UNITED, Fiber
AP&T, Fiber
AP&T, Microwave
ASTAC, Microwave
AT&T, Fiber
AT&T, Microwave
CVEA, Fiber
CVTC, Fiber
CVTC, Microwave
Cordova Telephone, Fiber
GCI, Fiber
MTA, Fiber
Other, Microwave
Quintillion, Fiber
TERRA, Fiber
TERRA, Microwave
Unknown, Fiber
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Anvik
Iditarod
Flat
Mountain Village
Pitkas Point
Holy Cross
Paimiut
Hooper Bay
Chevak
Pilot Station
Marshall
Russian Mission
Crooked Creek
Georgetown
Ohogamiut
Red Devil
Sleetmute
Aniak
Napamiute
Upper Kalskag
Chuathbaluk
Lime Village
Newtok
Tuluksak
Kasigluk
Akiak
Tununak
Bethel
Napakiak
Napaskiak
Mekoryuk
Umkumiute
Nightmute
Tuntutuliak
Chefornak
Eek
Kipnuk
Kongiganak
Kwigillingok
Quinhagak
Kuskokwim Bay
Koliganek
Port Alsworth
Nondalton
Newhalen
Iliamna
Kokhanok
Alekna
gik
Ekwok
Igiugig
Levelock
Platinum
Togiak
Manokotak
Clark's Point
Ekuk
Portage Creek
Naknek
South Naknek
King Salmon
Egegik
Shelikof Strait
Bristol Bay
Pilot Point
Ugashik
Port Heiden
Chignik Lake
Chignik
Nelson Lagoon
Port Moller
Ivanof Bay
Perryville
Cold Bay
King Cove
Belkofski
Sand Point
Unga
False Pass
Sanak
Pauloff Harbor
Petersville
Talkeetna
Skwentna
Willow
Sutton
Susitna
Palmer
Knik
Anchorage
Tyonek
Hope
Whittier
Nikiski
Kenai
Salamatof
Kasilof
Clam Gulch
Ninilchik
Anchor Point
Nikolaevsk
Homer
Nanwalek
Port Graham
Portlock
Seward
Moose Pass
Cooper Landing
Afognak
Ouzinkie
Kodiak
Uganik
Karluk
Uyak
Larsen Bay
Chiniak
Ayakulik
Old Harbor
Akhiok
Kaguyak
Gulkana
Gakona
Nelchina
Tazlina
Copper Center
Tonsina
Chitina
McCarthy
Nabesna
Valdez
Tatitlek
Cordova
Eyak
Chenega Bay
Cape Yakataga
Gulf of Alaska
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TERRA, Microwave
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Slana
Chistochina
Nabesna
Petersville
Talkeetna
Gulkana
Gakona
Nelchina
Tazlina
Copper Center
Skwentna
Tonsina
Chitina
McCarthy
Willow
Sutton
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Chenega Bay
Ninilchik
Cape Yakataga
Yakutat
Skagway
Klukwan
Haines
Juneau
Anchor Point
Nikolaevsk
Homer
Elfin Cove
Hoonah
Pelican
Tenakee Springs
Angoon
Nanwalek
Port Graham
Portlock
Kake
Kupreanof
Sitka
Wrangell
Hyder
Point Baker
Port Alexander
Coffman Cove
Edna Bay
Thorne Bay
Kasaan
Saxman
Craig
Ketchikan
Metlakatla
Hydaburg
Afognak
Kodiak
Woody Is.
Chiniak
BRITISH COLUMBIA
Gulf of Alaska
Dixon Entrance
Cook Inlet
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CVTC, Fiber
CVTC, Microwave
Cordova Telephone, Fiber
GCI, Fiber
MTA, Fiber
Other, Microwave
Quintillion, Fiber
TERRA, Fiber
TERRA, Microwave
Unknown, Fiber
King Island
Marys Igloo
Council
Koyuk
Nome
Elim
Solomon
Gambell
Savoonga
Shaktoolik
Nulato
Kaltag
Galena
Ruby
Rampart
Tanana
Minto
Manley Hot Springs
Ester
Nenana
Unalakleet
Poorman
Anderson
Healy
Stebbins
Saint Michael
Lake Minchumina
McKinley Park
Cantwell
Kotlik
Emmonak
Alakanuk
Grayling
Ophir
Medfra
Takotna
Nikolai
Sheldon Point
Anvik
Shageluk
Flat
Petersville
Talkeetna
Scammon Bay
Holy Cross
Paimiut
Chevak
Marshall
Georgetown
Skwentna
Hooper Bay
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Red Devil
Willow
Aniak
Sleetmute
Susitna
Knik
Upper Kalskag
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Lime Village
Newtok
Akiak
Tyonek
Hope
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Bethel
Mekoryuk
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Napakiak
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Ninilchik
Koliganek
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Iliamna
Homer
Ekwok
Igiugig
Nanwalek
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Levelock
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Port Graham
Manokotak
Ekuk
Naknek
South Naknek
King Salmon
Egegik
Saint Paul
Afognak
Kodiak
Attu
Saint George
Pilot Point
Ugashik
Karluk
Uyak
Chiniak
Shemya Station
Ayakulik
Port Heiden
Akhiok
Kaguyak
Chignik Lake
Chignik
Nelson Lagoon
Ivanof Bay
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King Cove
Sanak
Akutan
Pauloff Harbor
Unalaska
Fort Glenn
Adak Station
Atka
Nikolski
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